DOMESTIC ENGINEERING

A Weekly Record of Progress in Plumbing, Heating, Ventilation and all Matters Pertaining to Domestic Sanitation

Whole Number 1351 CHICAGO, NOVEMBER 2, 1918 Vol. 85, No. 5

Open Covenants of Peace, openly arrived at, after which there shall be no private international undertakings of any kind, but diplomacy shall proceed always frankly and in the public view. —From President Wilson's Program of World Peace.

WHAT STANDARDIZATION MEANS TO THE PLUMBING AND HEATING INDUSTRY.

WAR conditions have emphasized the importance of standardization in the promotion of conservation and efficiency. The Government has fully recognized its advantages as applied to military and naval equipment, and plumbing fixtures in housing for war workers.

The efficiency of standardization in speeding quantity production on a vast scale, and in simplifying methods and eliminating waste, was early realized by the Government.

Standardization as an industrial doctrine has today become firmly intrenched in the minds of all progressive business men. They recognize that it has been fully tested and weighed in the balance and found not wanting in the nation's vast war program.

For many years, standardization has had its staunch and true champions, who were never tired of expounding its merits from the standpoints of greater efficiency, simplicity and conservation.

Many of the brightest minds in the plumbing and heating industry have worshipped incessantly at the shrine of standardization, urging that uniformity in the manufacture of fixtures and fittings would eliminate a vast amount of unnecessary duplication, and hence conserve brains and industrial energy.

The marked success, which finally crowned the efforts of the organized heating trade to secure standardization of various types of fittings, was won only after co-operative action had taken place between the heating contractors and the manufacturers.

The unnecessary and superfluous amount of goods, which are manufactured to conform with the multiplicity of plumbing codes throughout the country, has been argued as a strong point in favor of the standardization of plumbing codes, which would in turn discourage the manufacture of so vast a number of special fittings to comply with the whim of some plumbing inspector.

The subject was discussed at the recent convention of the American Society of Sanitary Engineering at Chicago, the argument being made that if all state and municipal plumbing codes were standardized, greater results would be attained in this respect and in the inforcement of sanitary legislation governing the installation of plumbing.

It was urged that a committee, representing the most enlightened men in the realm of plumbing and sanitary science throughout the country, would be capable of drafting standards for plumbing codes, which might also prove a constructive basis for the formulation of a national plumbing code.

The subject of uniformity of plumbing codes, while it has its various complex angles which await solution, is doubtless worthy of the trade's active attention and study.

The most progressive men in the trade are inclined to the viewpoint, that a more complete standardization of plumbing and heating goods would not only be a step toward more efficient installations, but it would reduce the vast stocks which manufacturers, jobbers and contractors are obliged to carry from year to year.

Standardization as a general proposition may well be viewed in the light of a new and great commandment in the gospel of industrial efficiency, a commandment that bids fair to dominate industry in peace times as it has in war times.

Our entry into the world war soon taught us the lesson of standardization in its relation to maximum efficiency in production and in its relation to one-hundred per cent conservation.

Standardization is today changing industry. It is coming into its own. Business men must be prepared to accept it as a forward step in modern industry.

ECONOMICAL HEATING *of* COTTAGES *and* SMALL HOUSES

The Installation of Improved Heating Systems a Measure of Fuel Conservation as Well as of Efficiency and Comfort

By Frederick Grant

NOTWITHSTANDING the fact that the government has so restricted building operations that there is little construction work except for war purposes, the present exceptional conditions have opened up a good line of contract work for the heating contractor, if he will set about securing it in an intelligent manner.

The average mechanic and artisan are now earning more than double the wage they formerly received, and therefore those owning their homes are in a financial condition to make many improvements, which former circumstances and lack of sufficient money denied them. The first improvement likely to be considered is a modern heating system to replace the old or worn-out and wasteful furnace, and but very little argument is required to convince the average man of the importance of making this change.

In many localities the modern heating apparatus has been considered or regarded as somewhat of a luxury, one which the man of moderate means or salary could not well afford to enjoy and intended only for the use, comfort and convenience of the well-to-do or for heating the best classes of residences. This impression is erroneous. In other localities we find hundreds of small cottages and houses occupied by workmen of moderate means that are comfortably and economically heated by a small steam, hot water or vapor heating apparatus. The owners of these houses recognize the modern type of heating as a convenience necessary to the comfort and health of their families and by its use save dollars in fuel and doctor's bills.

The solution of the problem of the production and distribution of sufficient heat to warm a building with the smallest possible outlay for fuel has been the most potent factor in bringing about the beneficial changes, that have been made in the older methods of heating, and the mechanic and salaried man now install improved heating systems as much for the economy attained as for the comfort and efficiency afforded. The fuel required for two "parlor" heaters or stoves is sufficient to thoroughly warm a six or seven room cottage with a modern steam, hot water or vapor system. When compared with the expense of warming a building of equal size with hot air, we may safely consider a saving of two tons of fuel per heating season from the amount required by the average hot air furnace.

In this article we desire to consider steam and hot water as methods of warming for small houses and later to make a comparison of the probable cost of installation and operation of each system.

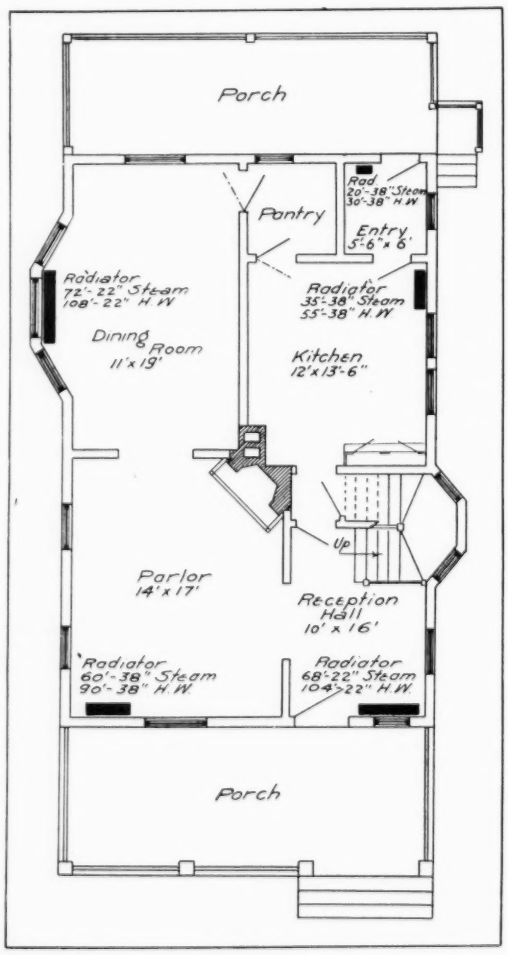


Fig. 1.

Heating by steam, as practiced at the present time, is entirely different in method from steam heating, as it was used years ago, and a steam fitter or heating contractor should realize that this difference affords a powerful argument for use with the house owner, who has in mind the installation of a hot air furnace for the reason of its lower first cost. Formerly, due largely to faults or faulty methods of installation (we did not then know as much about the circulation of steam as we do now), it was considered necessary to carry a pressure of at least three or five pounds at the boiler in order to circulate or force the steam through the heating system. Today, by reason of a carefully designed and generous sized system of piping, it is necessary to maintain only sufficient pressure to overcome that of the atmosphere, and packless radiator valves and efficient automatic air valves are to be obtained, which greatly assist in keeping atmospheric pressure from the system.

Methods of circulating hot water have also undergone a wonderful change. The improvements during recent years in methods of circulating hot water have been as marked and important as those in steam heating. Accelerating devices are now connected to the hot water systems, which assist and quickens the circulation and the heated water moves through the system from three to five times faster than was possible in the old waterlogged type of hot water heating apparatus. The old systems were said to be slow to heat, often requiring two or three hours before the maximum temperature was attained, and just as slow to cool. This criticism was just and true to a large degree. Of the modern hot water heating systems we may truthfully say that the use of smaller piping, and of intelligent methods of making pipe connections, has so increased the activity of the circulation that the system is quickly responsive to regulation, and a high or low temperature may be secured without unreasonable delay.

In order to make an intelligent comparison of methods we shall consider the heating of a moderate-sized frame dwelling—such as may be found in large numbers in every town of any considerable size. Fig. 1 shows a plan of the first floor and Fig. 2 a plan of the second floor. Owing to necessary reduction in the size of the drawings for publication a scale is not given but the size of each room is marked on the plans.

The amount of radiation indicated for each room, for both steam and hot water, has been estimated by the Mills rule, which considers one sq. ft. necessary for each two sq. ft. of glass and outside doors, one sq. ft. for each twenty sq. ft. of exposed or outside wall surface, and one sq. ft. for each two hundred cu. ft. of contents—this latter factor representing one complete change of air hourly, due to leakage or infiltration. The total radiation required for steam is 386 sq. ft., and for hot water 587 sq. ft. The location and comparative size of the radiators should be carefully noted, as we shall in a later article illustrate and compare the methods of piping used for each system.

It may be of interest at this time to call attention to the fact that a hot air system is not efficient for warming rooms, which are located on the side of the building exposed to the wind. The air pressure against the outer wall of the room prevents an even circulation of the heated air. With hot air the heat is distributed to a room through a register located in the floor or side wall, from which it ascends to the ceiling and then descends to the floor line as it cools and becomes heavier. The wind pressure against the exposed wall and consequent interference with the proper circulation of the heated air is illustrated by Fig. 3.

A steam or hot water radiator circulates or turns the air of the room, as illustrated by Fig. 4, and as the radiator is (or should be) located against the outside wall, the cold air leaking into the room is heated and circulated without materially affecting the distribution of heat from the radiator. Therefore, we may say, it is possible to warm all parts of the room, in which the

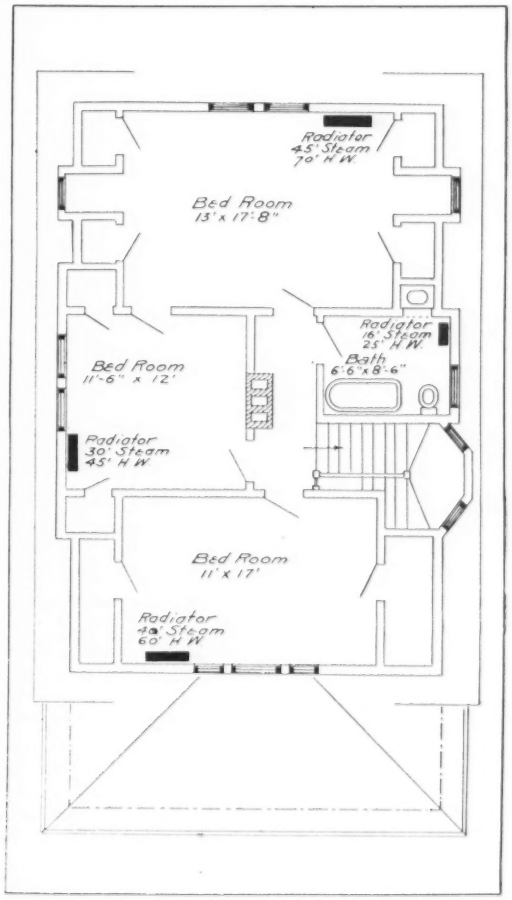


Fig. 2.

radiator is placed, no matter what may be the character of the building, the direction or velocity of the wind, or the low temperature prevailing outside.

At the present time we read much of fuel conservation and the need of using efficient and effective heating apparatus, and therefore the above facts should be carefully considered when comparing the work or efficiency of each system. The hot air furnace may deliver as many, or more, B. t. u. to the room, as a steam or hot water radiator, but unless this heat is properly circulated or distributed, the room is no better warmed than it would be with a stove.

Considering fuel conservation in connection with the warming of the residence illustrated, note that although all exposed parts of the building are covered by the location of the radiators, it is not necessary or desirable to use all of them except during extreme weather. It is a proper understanding of this fact that allows of fuel conservation in the true sense of the term. The openings between the parlor and dining room, and the parlor

and reception hall are large and therefore the parlor radiator may be closed off a large portion of the time, and the room will receive sufficient heat from the radiators in the dining room and reception hall. The open staircase from the reception hall to the second floor will convey enough heat to the bed rooms on the second floor to warm them sufficiently for sleeping purposes unless the weather is extremely severe. The small radiator in the rear entry also is intended for use only during very

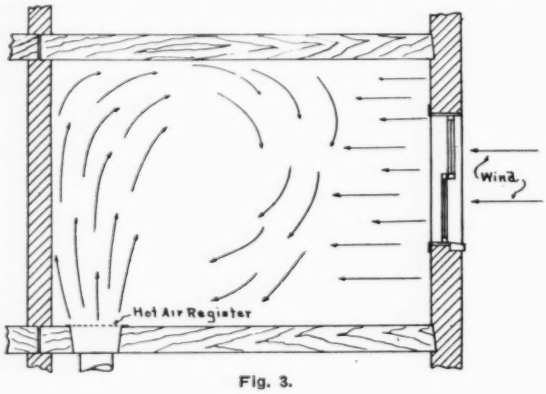


Fig. 3.

cold weather and may be turned off the greater part of the winter.

With all of the radiators in service there are delivered to the rooms hourly approximately 90,000 to 95,000 B. t. u. This amount of heat is sufficient to warm all of the rooms to 70 degrees, when the outside temperature is 10 degrees below zero, or for a temperature difference of 80 degrees. As the average temperature difference in the United States during the greater part of the heating year (when all sections of the country requiring artificial heat are considered) is less than 40 degrees, it is easy to comprehend why a large portion of the radiation may be turned off much of the time. The parlor and rear entry radiators on the first floor, and the radiators in the chambers on the second floor constitute about one-half of the radiating surface in the building and deliver about one-half of the B. t. u. required to heat it in severe weather. Thus, by intelligent operation of the apparatus a large portion of the fuel ordinarily consumed daily can be saved the greater part of the heating year. *This is real conservation of fuel.*

Not every residence is so constructed, or divided into rooms, that it is possible to turn off one-half of the radiators during ordinary weather and still distribute sufficient heat to keep the building comfortable, but we feel sure that a careful survey of every heating plant will result in the discovery of some radiators that may well be dispensed with, except that they will be required occasionally in severe weather. Every radiator turned off conserves fuel.

Hot water heat is, and doubtless for a long time will be, a popular method of warming residences.

Heating methods have advanced rapidly during the last ten or fifteen years. It is not necessary to go back many years to reach the period, when hot water heating was considered more or less of a fad, and many people either were prejudiced against it or had little faith in the results to be obtained from its use.

In this connection a personal experience of the writer is interesting and not without a bit of humor.

A little more than twenty-five years ago a Division Superintendent of one of our prominent western railroads desired to heat his house with hot water, but could not assure himself that a hot water apparatus would prove effective, stating to the writer, who was then contracting and installing heating apparatus, that two engineers of the road, on whose judgment he relied, had asserted that hot water heating was a fad, and further that it would never thoroughly warm his home.

After various conferences and a voluminous correspondence, in which several broad guarantees were offered, he allowed us to install a hot water heating apparatus. After the work was completed and tested, he was so pleased with its operation that at once he became an ardent champion of the system, in fact so actively did he interest himself that we secured several heating contracts in his city through such co-operation.

Among our customers was the Mayor of the city, and to illustrate the fad idea, which prevailed, I will relate briefly the circumstances, which caused his Honor to adopt hot water heat for his home.

The superintendent, whom we will call Mr. Brown, requested the writer to come and look after the heating of a large residence owned by the Mayor. We complied with the request in the usual manner, measuring the building, and estimating on the cost of a steam heating apparatus, which was the kind of system desired by the owner.

The Mayor, a man of perhaps fifty or fifty-five years of age, and a widower for quite a few years, had lately been married to a young lady for whose comfort and con-

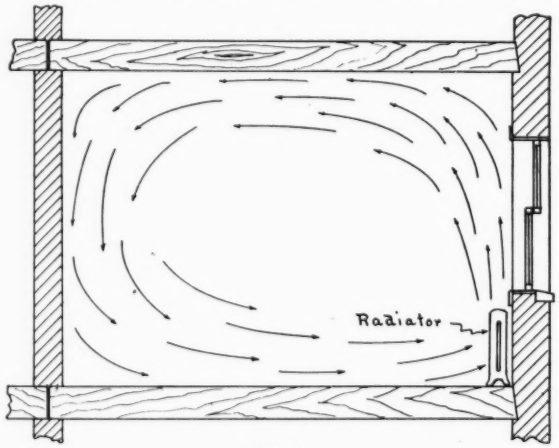


Fig. 4.

venience he was remodeling his home. While sitting in his office, after we had advised him the cost of a steam heating apparatus, he suddenly turned to the superintendent with the question: "Brown, what made *you* put in hot water heat?" Mr. Brown replied that he did not know, except possibly because it was considered a fad. The Mayor rocked back and forth on his chair a moment then swung toward the writer and said: "Mr. Grant, what will it cost to heat my house with hot water?"

After revising the figures to cover the installation of a hot water apparatus, we named a price for the work, which was about 40 per cent higher than for steam, when the Mayor said, "Well, Mr. Grant! I think that you had better put in hot water. A fad, eh! Well, I have a young wife and she is—on fads, so I think it best to put in hot water." To-day there are hundreds, if not thousands, of such systems in that city, and no doubt hot water heating there has long since ceased to be considered simply as a fad.

The WHY *and* WHEREFORE *of* SANITARY ENGINEERING

A Series of Articles on Technical and Scientific Plumbing and Sanitation

By Arthur Bateman

(Continued from Page 383 in the September 7th Issue.)

The Pressure of Water.

WATER is a chemical compound consisting of two atoms of hydrogen and one of oxygen. It possesses no definite shape and moulds itself to the form of the vessel in which it is contained, and its shape changes with that of the portion of the vessel which it occupies.

Practically speaking, it is incompressible, but scientists tell us it possesses a certain amount of elasticity and compressibility, and if exposed to a pressure of 3,000 pounds per square inch, its volume is said to be reduced 1/12 inch.

The pressure of water is equal to its own weight, and is the same in all directions. It is the same whether the surface which receives the pressure faces upwards, downwards, horizontally, or obliquely. In this respect the action of water is very different from that of pieces of iron or other loose solid particles. In a heap of scrap lead, the pressure at a point of the interior is greater in the vertical than in the horizontal direction, the difference being produced by gravity and maintained by friction. The molecules of water can slide past each other with practically no friction, consequently no such difference can exist.

A heap of iron filings can stand upright, provided its sides are not so steep that when any of the material is sprinkled upon them it slips down. This limiting gradient depends on the coefficient of friction of the material against itself; and when this coefficient is zero, as in the case of liquids, there can be no gradient at all, which means, of course, the surface of water at rest must be horizontal.

The pressure of water is proportional to the perpendicular distance below the surface. This is spoken of as the *head of water*. The length or direction of piping are of no consequence in making calculations, and only the vertical distance between two points is considered. In Fig. 1 the pressure at A and B is exactly the same, as the perpendicular distance below the surface of the water is 20 feet in both cases.

Coming now to the actual pressure exerted, we find a column of water 1 foot in height weighs, or exerts a pressure of 62.5 pounds on an area of 1 square foot. If the height is increased to 2 feet, the pressure will be doubled, and an additional 62.5 pounds must be added for every foot increase in height. Hence we have the rule: Head in feet multiplied by 62.5 equals pressure in pounds per square foot.

Let us assume we are asked to find the pressure on the bottom of a service reservoir 220 feet × 86 feet with a head of 14 feet. Then 62.5×14=875.

Answer:—875 pounds on each square foot.

In order to find the total pressure, the pressure in pounds per square foot must be multiplied by the number of square feet contained on the bottom of the reservoir.

Thus we have: (220×86)×875=16,555,000.

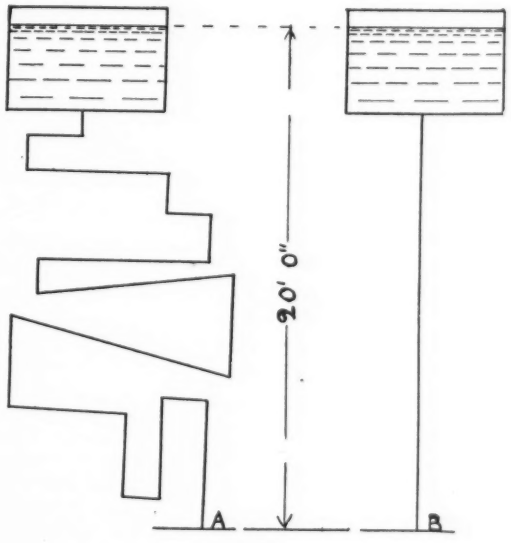


Fig. 1.

Answer:—16,555,000 pounds pressure.

In large calculations similar to the above, the answer is usually given in tons. To reduce to tons, divide the pounds pressure by 2,000.

Thus: 16,555,000÷2,000=8,277½ tons.

For smaller calculations the pressure in pounds per square inch is used in preference to the square foot.

It has already been shown that the pressure in pounds per square foot for every foot head is 62.5 lb.

There are 144 square inches in each square foot so if

we divide 62.5 by 144 we will find the pressure in pounds per square inch for each foot head, as follows: 62.5÷144=.434.

This gives us the rule: Head in feet multiplied by .434 equals pressure in pounds per square inch.

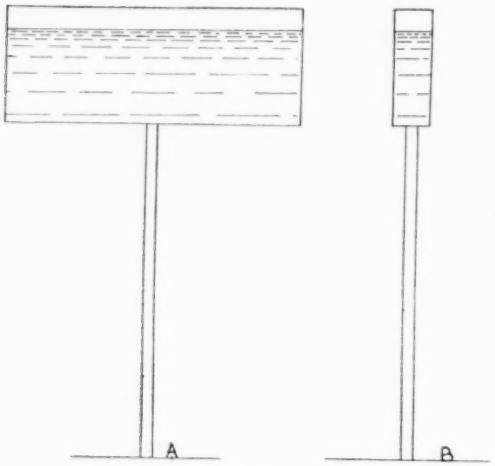


Fig. 2.

Let us assume we have a 4-inch diameter soil stack in a building 36 feet in height, and completely filled with water, the pressure in pounds per square inch at the foot of the stack will be 36×.434, or 15.624 pounds per square inch.

If the total pressure is required, it can be found by multiplying the pressure in pounds per square inch by the number of squares at the foot of the stack. This being a 4-inch circle we will have: (15.624)×(4×4×.7854)=196.33 pounds total pressure.

By the same method we can find the weight of a rod of iron or other metal, any given length and diameter. Assume the rod to be a vertical column of water 20 feet in height and 2 inches in diameter. This would give us: (20×.434)×(2×2×.7854)=27.26 pounds weight of water.

Iron may be taken as 7.6 times as heavy as water, bulk for bulk, therefore 27.26 multiplied by 7.6 will give us the weight of a rod of iron 20 feet long and 2 inches thick.

Thus 27.26×7.6=207.176. In other words, approximately 207 pounds.

If a pipe is filled with a liquid other than water first find the pressure in pounds of water then multiply this by the specific gravity of the liquid.

If a ¾-inch pipe 25 feet in height is filled with mercury, the pressure will be: (25×.434)×(.75×.75×.7854)×13.6=65.17, or approximately 65⅕ lb.

.75=¾ and mercury is 13.6 times heavier than water.

The sanitary fixtures in most buildings, over four stories in height are supplied by gravitation from a water tank installed above the highest fixture. Where this method is adopted in the case of very high buildings such as twenty stories and over, the plumbing on the lower floors is subjected to an enormous pressure and strain, and much hammering is likely to occur in the pipes, and splashing of water when a faucet is opened. To obviate this, a water pressure reducing valve is placed in the main supply pipe at a convenient point, and this is capable of reducing the pressure from 200 pounds to 5 pounds or less, besides maintaining it without variation. The valve is adjustable and any desired pressure can be obtained by turning a tension screw on the top of the cap.

When the pressure in pounds per square inch is known, the vertical height to which the water will be raised can be found by multiplying this by 2.31. Assume the pressure in the mains is 25 pounds per square inch, the water will be raised to a height of 25×2.31, or 57¾ ft.

It must be clearly understood that increasing the size of a supply pipe will not increase the pressure. Under the same head the pressure in pounds per square inch is the same in a ¼-inch pipe as in a 4-inch pipe. Nor will the size of a house tank increase the pressure. One tank may contain 2,000 gallons, another 6 gallons, as in Fig. 2, but the pressure at A and B is the same, for the water level in both tanks is the same height. Practically all the weight of the 2,000 gallons is supported by the sides and bottom of the tank. All that need be taken into consideration is a column of water the diameter of the supply pipe and the height of the water in the tank

When pressure is exerted upon any part of enclosed water, it is transmitted with undiminished force upon all equal areas and at right angles to them. This is known as the hydrostatic paradox, the multiplication of water power, or the transmissibility of pressure in water.

In consequence of this principle, a quantity of water however small, can be made to support a weight however large.

Figure 3 will help to make this seeming paradox clear. A 1-inch square pipe is connected with a 12-inch square pipe, and these are partly filled with water. The water

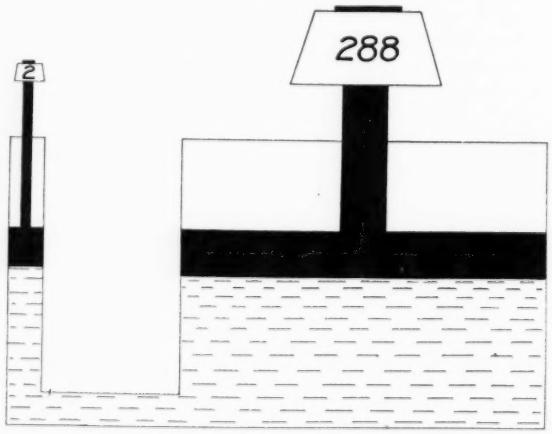


Fig. 3.

follows the natural law and finds its own level regardless of the difference in diameters.

Now place a 2-pound weight on a piston in the 1-inch pipe and a 2-pound pressure will be exerted without any change in its intensity to all parts of the 12-inch pipe.

The latter has an area of 12x12, or 144 square inches, and 2 pounds on each square inch is 288, which is the weight in pounds that must be added to equalize the 2-pound weight.

By increasing the diameter of the larger pipe or by adding more weight or force to the smaller one we can produce any desired pressure. This invaluable principle is utilized in the hydraulic press and hydraulic lift.

The Real Thing.

Younger Sister: "What is stoicism?"

Elder Sister: "Stoicism is the ability to congratulate the fiancee of the man you wanted to marry without showing any disappointment."—"Boston Transcript."

LEGAL QUESTIONNAIRE

*How Can I Delegate Authority to Another Person to Act for Me by Means of Power of Attorney?—This Question Is Answered in a Most Careful Manner**

By "The Judge"

Delegating Authority to Another Person to Act for You by Means of a Power of Attorney—What It is Necessary to Do.

Editor "Domestic Engineering":—As I may be called at any time in the present draft and want to be protected by leaving some person with power to act for me in my business and in the matter of some real estate, which I own, will you tell me how to give my brother authority to act in my stead. Also will you please give me a form of power of attorney, if that will be sufficient for my needs. R. E. T.

Answer:—Your desire to protect yourself by arranging for your affairs, so that some other person will be empowered to act in your place, is evidence of a very commendable precaution in these troublesome war times, when almost anything may happen over night in the way of limiting a business man's right of personal action. In addition to the possibility of induction into the military service, a business man may find himself flat on a sick bed without power to draw funds from his bank, with which to pay necessary bills or take other action which might be very necessary in the conduct of his business.

It is well to keep in mind, however, that a power of attorney is a dangerous authority to give to an employee, relative or other person, unless the party to whom the power is given, is absolutely honest and to be entrusted with your affairs. The fact that a power of attorney is abused is no protection to you, as long as the transaction carried through is within the scope of the authority, which you have delegated, and as long as the party with whom your agent has acted is innocent of any participation in the wrong which is done you. Powers of attorney or other forms of agency should never be given, unless implicit confidence can be placed in the person to whom they may be given. It is always well to restrict and limit the power of attorney to a very narrow field of action, and in this way protect yourself to the greatest possible extent.

An agent for any purpose may be, and often is, appointed by a writing, called his power or letter of attorney, which has been defined as an instrument authorizing a person to act as the agent or attorney of the person granting it. The decision between powers of attorney and warrants of attorney have been clearly set forth in the textbooks and court decisions. A power of attorney is an instrument by which the authority of any attorney in fact or private attorney is set forth. By attorney in fact is meant one who is given authority by his principal to do a particular act not of a legal character. A warrant of attorney is an instrument authorizing an attorney at law to appear in an action on behalf of the maker or to confess judgment against him.

It is sometimes required by law that an agent's authority to do a certain act, such as to enter into a contract required to be in writing, shall be in writing; and where written authority is required by law, the same provision, which requires the writing, forbids that a power previously given shall subsequently be extended or altered by parol (orally). Thus, under the statutes of some states, written authority is required to enable an agent to execute a written contract or memorandum, as required by the statute of frauds, for the sale or purchase of real property, or to execute a lease of real property required by the statute to be in writing. This rule has an exception in the case of an officer of a corporation in some states. Thus the treasurer of a corporation, the business of which is dealing in real estate and taking options, who has been authorized to take an option in his own name to purchase real estate, is held to be authorized to sell the property to an intending purchaser without written authority. This is so because a corporation can act only through its officers and employees, and to require it to execute a written authority would be stretching the law beyond anything contemplated by the framers of the statutes.

If your brother is to deal with real estate, it is well to keep in mind a distinction made in cases where an agent actually conveys real property and where he simply signs an agreement to convey. Under some statutes this distinction is made, and the former actual conveyance must be under a written power of attorney, and the latter may be under an oral power. The conflict in the decisions on this point, which is apparent rather than real, is usually traceable to the differences in the wording of the statutes of the various states.

When a power of attorney has once been issued, the attorney has a right to keep the instrument until it is recalled by the principal. The validity of the power, where it authorizes transfer of real estate, is to be determined by the law of the place where the property is located, and not the law of the state where the power may have been executed. This is important, if your real estate is not located in the state where the power is executed by you. It has also been held that a power of attorney requires a seal, but that is not necessary and is now much less common than formerly, except where the power authorizes the execution of a sealed instrument.

In order to constitute an ordinary power of attorney, no special form is requisite, even to satisfy the statute of frauds, but it may consist of any kind of a private

*Every Effort is made to the End that these Answers may be authoritative. However, we cannot assume any Responsibility because of the very Nature of the Service, which is rendered without a personal Interview.—Editor.

writing, or of several letters of writings properly connected. It is sufficient if the person granting the power makes a clear expression of his intention relative to the appointment, and if the written power is insufficient, it cannot be validated by oral instructions. The writing need not be so detailed as to specify each act the agent is empowered to do, or particularly to describe the property with which he is to deal, provided it is specific enough to enable him reasonably to understand his principal's will and to identify the property intended. If you have more than one piece of property, it is well to execute as many powers of attorney (meaning separate similar instruments) as you have pieces of property in different counties, for a power of attorney must be filed in the registry of deeds, where each piece of land is located.

A power of attorney, like other instruments, must be duly proved or acknowledged before it can be recorded in a registry of deeds, for instance, except that, if the power is an ancient one, it may be admitted in evidence at the trial of a case under the exception to the general rule in favor of ancient documents. However, in the absence of a statute requiring it, an ordinary power of attorney, not dealing with real estate, need not be acknowledged. You will find below forms of powers of attorney to be used where you are doing business as an individual and also where your business is incorporated:

Power of Attorney (For Individual).

Know All Men by These Presents that I, John Jones of..... State of....., have made, constituted and appointed, and by these presents do make, constitute and appoint John J. Smith, of..... in the State of....., my true and lawful attorney for me and in my place, name and stead, to carry on and conduct the business of plumbing and steamfitting, at..... in the City of....., and State of....., to buy and sell all necessary fixtures, materials and supplies, to furnish labor for plumbing and steamfitting work, to make contracts for plumbing and steamfitting work, to carry on my plumbing and steamfitting business generally, and to draw, execute, make, sign, seal and deliver for me, in my name, all bills, bonds, notes, conveyances, and other instruments whatsoever, as shall be necessary to the proper conducting of said business; to sell, mortgage and otherwise deal with all real estate standing in my name or in which I have an interest, wherever situated; and generally to act for me and in my stead in all matters, both in connection with my business and in connection with my private affairs and property, as fully, amply and effectually, to all intents and purposes, as I, the said constituent, if present, ought or might personally, although the matter should require more special authority than is herein comprised.

I, the said constituent, ratifying, allowing and holding firm and valid all and whatsoever my said attorney or his substitutes shall lawfully do, or cause to be done in and about the premises, by virtue of these presents.

In witness whereof I have hereunto set my hand and seal this.....day of....., in the year of our Lord, 19.....

(Signature)..... (Seal)

State of.....

.....ss.

.....19.....

Then personally appeared the above-named John Jones and acknowledged the foregoing instrument subscribed by him to be his free act and deed. Before me,

.....

Official Designation
of Notary or Justice of the Peace.

If your firm is conducted as a corporation, the following form will give you an idea of what is necessary to give your brother the power to act for the corporation:—

Power of Attorney (Corporate).

Know All Men By These Presents:—That the John Jones Company, a corporation duly organized under the laws of the State of....., does hereby make, constitute and appoint John J. Smith, of....., in the State of....., its true and lawful attorney, for it and in its name, place and stead, to collect, receive, and receipt for, any claim or claims, or other bills receivable of the corporation, and to incur and pay on behalf of the said corporation, all reasonable expenses incident to the collection of said claims, etc., including all proper costs of any suit or other legal process necessary thereto, and generally to do all such other things in connection therewith as may be necessary and proper in the premises.

In Witness Whereof, the said John Jones Company has caused its corporate name to be signed hereunto by its President, John Jones, and its corporate seal to be affixed and attested by its Secretary all being done in the city of....., in the State of....., this.....day of....., 19 .....

John Jones Company,

(Corporate Seal) By.....

Attest Seal:.....Secretary.

Of course, general authority to carry on corporate business is more easily and practically given by vote of the corporation appointing a person to an official position, but where a corporation is really a one-man affair, as it may be in your case, it is just as well to delegate the authority to deal with bills receivable, etc., by a power of attorney. Any other matters, which you might want your brother to attend to, could be inserted and enumerated in addition to those contained in the above form.

When no date for the ending of the authority given under a power of attorney is set forth in the power itself, as where the power is a continuing one, a formal revocation is necessary. Notice of this revocation should be sent to all parties in interest, and, in case of a general power of attorney should also be published in newspapers.

A power of attorney, unless it contains a stipulation that it is not revocable, may be revoked at the will of the principal, unless some interest of the attorney would prevent. Although the authority may have been given by written instrument, an oral revocation, at least between the principal and his attorney, may be effectual. Among the things that will revoke a power of attorney is, of course, the death of the principal. There are some exceptions to this general rule and some limitations in the nature of exceptions.

WINDOW SHADES HELD GREAT AID IN FUEL CONSERVATION.

Professor John R. Allen, dean of the Engineering School of the University of Minnesota and former president of the American Society of Heating and Ventilating Engineers, has announced the results of an experiment just completed proving that window shades carefully adjusted will save from 20 to 40 per cent of the heat in a room. The experiment was conducted at the request of the Fuel Administration. "The air space," says Professor Allen, "between the windowpane and the shade serves as a barrier to the cold. Double shades are found to be twice as effective."

A campaign for spreading these facts before the public is under consideration by the Fuel Administration.

QUESTIONS & ANSWERS

HOW TO HEAT THE WATER IN A SWIMMING POOL.

Editor "Domestic Engineering":—Will you have the kindness to give me your idea of the best way to heat the water in a swimming pool as per the enclosed sketch. The owner would like to heat the water with a hot water heater direct, thus using less coils, etc.

Pennsylvania. B. F. G.

An elevation of the pool and heater cellar, as submitted with the above communication, is shown by Fig. 1. The pool, is 35 ft. long, 2 ft. 6 inches deep at the shallow end, and 7 ft. 6 inches deep at the opposite end, has a mean depth of 5 ft., and as it is probable that the pool will be filled only to within about 12 inches of the top, we may conclude that the average depth of the water is 4 ft. The pool is 19 ft. wide and 35 ft. long, therefore, $19 \times 35 \times 4 = 3{,}325$, which is the contents of the filled portion of the pool expressed in cubic feet. There are approximately 7½ gallons in a cubic foot; therefore, $3{,}325 \times 7.5 = 24{,}937.5$, or, say, 25,000 gallons of water to be heated. A gallon of water weighs 8⅓ pounds. $25{,}000 \times 8\frac{1}{3} = 208{,}333$ pounds.

We now have a basis for determining the size of heater required. Suppose that anthracite coal containing 14,000 B. t. u. per pound is to be used for fuel, and that this is to be consumed at an efficiency of 60 per cent (a fair average), 60 per cent of 14,000 or 8,400 B. t. u. per pound will be available for actual heating. $520{,}825 \div 8{,}400 = 62$ which is the number of pounds of coal required per hour. Supposing the rate of combustion to be 5 pounds of coal per sq. ft. per hour (another fair average), a boiler having 12.4 sq. ft. of grate will be required. We have suggested factors for use in arriving at these conclusions. Correspondent can substitute such other factors as his requirements may make necessary.

The simplest method of heating a large body of water for swimming pools is, without doubt, by direct water circulation. The heater should be placed sufficiently low to insure a positive circulation of the water through it. If the depth of the heater cellar is not sufficient a pit for the heater should be used. It should be set so that the return openings will be at least 18 inches below the bottom of the pool.

Fig. 2 shows a ground plan and Fig. 3 an elevation of a suggested method for correspondent to use. The flow

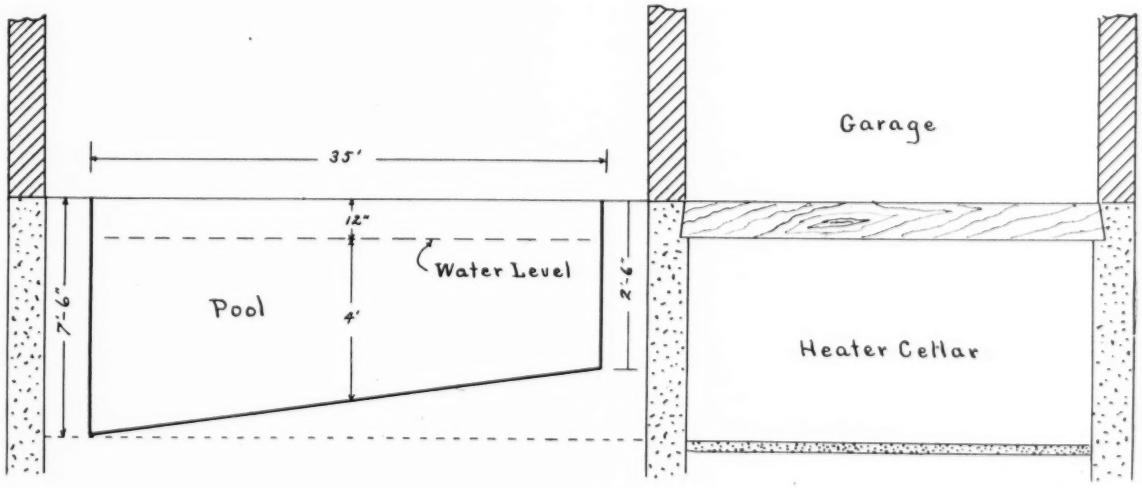


Fig. 1.

If the water in the street mains has a temperature of 50 degrees, and the requirements of the pool are 75 degrees, the water must be heated through 25 degrees. The requirements to heat the water will depend upon the length of time available to do the work, or perhaps the water in the pool is to be continuously changed, as should be the case, if the pool is to be used by any considerable number of people. Suppose the water is to be changed at the rate of one complete change every ten hours. This is equivalent to 20,833 pounds of water hourly. To raise this water 25 degrees hourly requires $20{,}833 \times 25$ or 520,825 B. t. u.

pipe from the heater is taken around the side of the pool and supplies two feed pipes, which enter the pool from 18 to 20 inches below the normal water line; one about two feet from the shallow end and the second about half way the length of the pool. The size of these pipes will depend, of course, upon the service demanded. If we understand the requirements correctly, we should say that two 4-inch flows to the pool will be sufficient. The returns should be the same size and should be connected from the deep end of the pool about 6 inches from the bottom.

As already suggested, the circumstances surrounding the work govern the requirements. For some of the later types of pools, for use by a considerable number of people, there is provided and admitted at the shallow end a constant supply of fresh water. This enters the pool

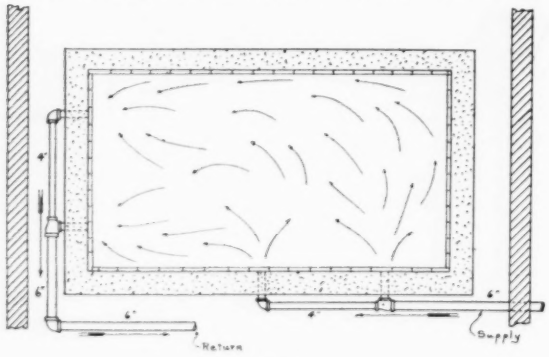


Fig. 2.

through several small pipes, the excess water being drained from the bottom at the deep end. This water as a rule is not heated before delivery to the pool and therefore the heated water entering the pool must be enough warmer to compensate for the heat loss in mixing with the cool fresh water supply. There is no doubt but what a fresh water supply of this nature is beneficial in removing much of the sediment from the water in the pool.

Lack of space will not allow of a more thorough discussion of this interesting question. "Domestic Engineering" has published a small book on "Swimming Pools,

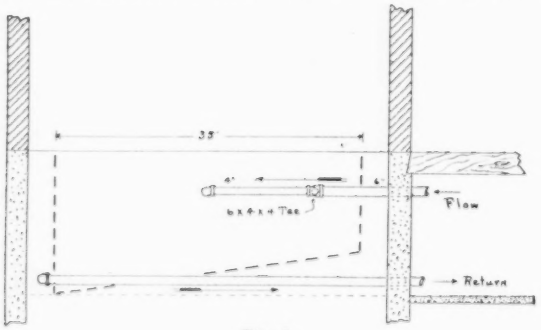


Fig. 3.

Their Construction and Methods of Heating," by Allen and King, which may be obtained from the Book Department.

HEATING DOMESTIC HOT WATER SUPPLY AND RADIATORS FROM FURNACE.

Editor "Domestic Engineering":—I have just been asked to remodel a combination hot water heating and hot water supply system. My customer has two heaters in his furnace, one for the range boiler and the other for the radiator in the bath room, substantially as shown in Fig. 1.

I think the radiator would heat better, if the two heaters were connected together, making the arrangement a closed system.

The way it is now, the radiator is hooked up with an expansion tank.

Will you kindly tell me how I can obtain the best results?

Iowa. K. A.

Possibly the present plan is the safest and the simplest. It depends a great deal upon the water pressure, as to which plan really is most suited to the building.

If the water pressure is less than, say 30 pounds per square inch, it might be quite proper to hook the water

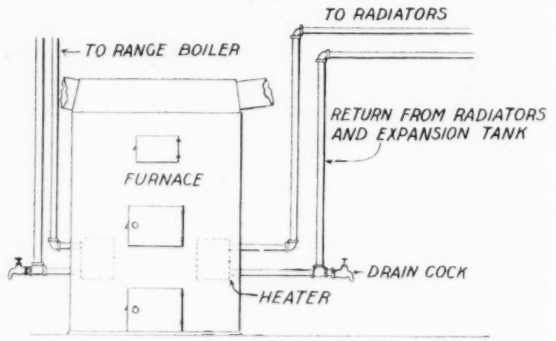


Fig. 1.

heaters up together, and supply both boiler and radiators from the combination.

If, however, the pressure is higher than 30 pounds, we consider it advisable to have separate systems, using an expansion tank on the radiator heating system.

You do not say what the specific trouble is, and therefore it is difficult for us to advise you definitely.

Of course a combination system has this advantage.

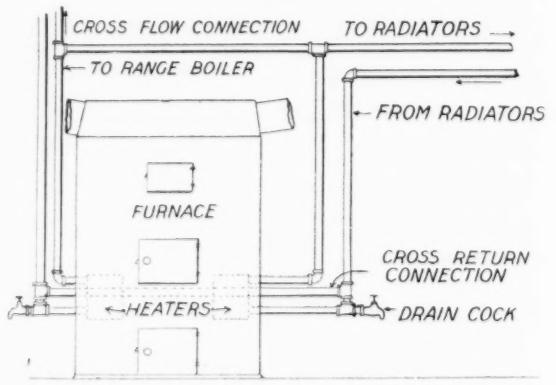


Fig. 2.

You can switch all the hot water into the radiator or into the boiler, as may be required, but that necessitates the operation of a valve somewhere, which is not desirable in domestic hot water service.

The scheme of heating water for domestic use from a heater in a furnace has its drawback. The heating is sometimes erratic. There is plenty of hot water usually during cold weather, while the furnace fire is brisk. But when the fire is dampened down, it is impossible to heat the water as quickly.

It will be all right as regards supplying radiators from a heater in furnace, because they require more heat the very time that the fire is brisk. The radiator service works in unison with the furnace.

But it is different with the domestic service. Practically the same amount of hot water is used from day to day, independent of the weather and the condition of the furnace fire.

In case you wish to make a combination system so that all radiators can be shut off during mild weather and

all hot water be diverted into range boiler, we suggest the arrangement shown in Fig. 2.

In fact, the only change is in the cross-connection pipes, and at the expansion tank. A hot water cross-connection is made at flow pipes near basement ceiling. A return or circulation cross-connection is made between heaters around back of furnace. The expansion tank is removed and expansion pipe plugged.

The radiator, therefore, will be subject to the full water pressure, and you must be sure it is not great enough to burst the radiator. We cannot tell you how much pressure the radiator will stand, but if it is an ordinary cast iron radiator, it should stand 30 pounds.

There should be a valve at radiator. During mild weather this valve can be closed, then both heaters will heat range boiler. When range boiler gets too hot, just open radiator valve, then some of the hot water will go to radiator.

We believe this change should work satisfactorily. It should at least give plenty of hot water at range boiler, even if it is at the expense of the radiation at times.

VACUUM PUMP WILL EFFECT SAVING OF FUEL.

Editor "Domestic Engineering":—Will you kindly inform me through your "Questions and Answers," if I could make any saving in fuel by placing a vacuum pump on the return line of a low-pressure, one-pipe, house heating system? Two return lines, 2 ft. above water level in boiler, are to be jointed together, as shown in sketch herewith, and vacuum pump connected to same, as indicated by dotted lines.

Texas. F. A. G.

A vacuum pump properly connected to the returns of a steam heating system will effect a considerable saving in the amount of fuel consumed by the apparatus. Con-

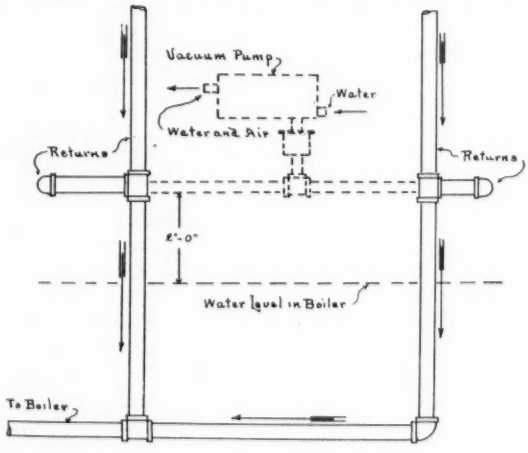


Fig. 1.

stant automatic removal of the air from the system, and the accelerated circulation of vapor and steam, due to the removal of atmospheric pressure upon the apparatus and the vacuum pull upon the return lines, will produce more positive and better service from the radiators with a much less expenditure of fuel than would be required for a common steam system open to the atmosphere. This saving in many cases will approximate twenty-five to thirty-five per cent.

The method of connecting the vacuum pump will depend upon the character of the pump used and the power available for its operation. Fig. 1 illustrates the sketch submitted by correspondent and from the method of connection shown, we judge that it is operated by water pressure and is an air-line pump used only for the automatic removal of the air and atmospheric pressure from the heating system. We cannot advise as to the correct method of connecting the pump without knowing the character of it.

LEGAL DECISIONS.

Validity of Subcontract for Inferior Fixtures.

A special term of the Supreme Court of New York had in the case of Greenberg vs. Marsh et al., 167 New York Supplement, 102, two actions to foreclose mechanics' liens. The court says that defendant Marsh had two contracts for the plumbing, one for each building, owned by the construction company. He entered into two subcontracts with the plaintiff to supply the materials. A realty company subsequently took a deed of the premises.

The contract defendant Marsh had with the owner called for a certain class of fixtures, while his contract with the plaintiff called for an inferior quality. The court is inclined to think, from the evidence, that the defendant Marsh hoped and expected to be permitted to install an inferior grade of fixtures, but because of a change of ownership was unable to carry out this plan. The plaintiff delivered for approval samples of certain fixtures which he claimed to be of the grade called for by his contract, but the new owner rejected them. The plaintiff, although claiming that they were in accordance with his contract, notified the defendants that he was ready and willing that the defendants should select the fixtures themselves, only limited by the grade called for by his contract, and offered to furnish same. The defendants declined to accept such offer, and insisted on the plaintiff delivering the better grade called for by the contract with Marsh. This was not a breach by the plaintiff of his contract with Marsh, but was rather a breach of that contract by the defendants. It follows that the plaintiff, having been prevented by the defendants from carrying out his contracts in their entirety, and having fully performed, except in so far as prevented by the defendants, was entitled to recover the value of the materials furnished by him, and had a valid lien on the property therefor.

The court thinks it clear, also, that the plaintiff's liens were valid as against the defendant realty company, both because the lien was filed before the deed to it was recorded, and because of its knowledge of and assent to plaintiff's furnishing the materials.

The testimony of one of the defendants' witnesses that the reasonable value of the materials furnished by the plaintiff would be wholesale cost plus 10 per cent to cover all the plaintiff's expenses, profits, etc., does not seem to the court to be reasonable, but the court thinks that the plaintiff's testimony of 20 per cent to 25 per cent addition to wholesale cost was more reasonable.

The plaintiff accepted in settlement of two payments of $1,300 and $1,400 one-half cash and one-half notes. If he omitted to see that the notes he took did not bear interest, it was his own fault, and as he took the notes in settlement he could not charge interest thereon. Any item of interest on notes cannot enter into the value of material delivered for which a lien is claimed.

A new patent for an alloy of lead and cadmium, capble of replacing tin in solder as well as in the manufacture of bearings, is reported from Germany.

The PLUMBER *and* FITTER WHO PROFITED *by* HIS COMPETITOR'S SUCCESS

He Discovered That Salesmanship Is the Secret of Profit and That He Must be a Salesman as Well as a Contracting Plumber and Fitter

By Wallace H. Bancroft

ONE day a young man, a cub in the plumbing and heating game, sat in his 2x4 shop on a side street, near a blind alley, and wondered if he had any brains.

He had almost forgotten that he was in business at all, and he was beginning to feel like the proverbial number 13. His name was William Goat and he rather suspected that maybe his name had something to do with his inability to gain the respect of the local banker.

As he sat and exercised his tink tank, Jack Hammond, also a young master plumber and fitter, whirled by in a new limousine. Bill stared and wondered how Jack "did it." By what secret mental process did he convince the world that it should be generous with him—to the extent of giving him a limousine and letting him scoop up a tidy amount of the stuff called profit?

The more Bill thought about Jack, the more his head seemed to hurt.

He was thinking hard, very hard or thought he was. He was trying to account for Jack's rise in the community, but he couldn't solve the mystery. He had gone to school with Jack and he remembered that he was no star scholar, but, in fact, the dullest proposition that ever occupied space in a classroom. Still, in spite of his apparent stupidity, he had gone forth and bucked the world and actually delivered.

William Goat decided, however, that there was no earthly use trying to account for Jack's prosperity. He remembered that a great philosopher once said: "Don't try to account for anything, and you'll be happy."

William or Billy Goat, as some of his friends called him when they wanted to be clever, leaned back in his chair and lit his corncob.

"The philosopher was partly wrong," thought Goat, whose father spelt the name Goatt, but Bill wanted to be up-to-date, so he cut out one "t." "I think it would be better to lay off trying to account for Jack's success, and try to account for the fact that I am as shy of money as a snake is of hips."

As Goat sat and waited for something to turn up and at the same time worried over the fact that he had not dropped into farming instead of plumbing, he heard footsteps, and in walked Joe Forbes, the popular sales ambassador, whose reputation for co-operation was growing steadily among the plumbing and heating contractors of that section of the country.

"Hello there, Bill," declared Forbes as he grasped his hand with firm cordiality.

"Hello yourself, Joe," returned Goat adjusting his hat to one side of his head and breathing a deep sigh.

"Well what are you doing Bill? Waiting to hear the melodious tingle of the 'phone or are you just resting?" laughed Joe, as he sat down on the edge of a tub and lit a fresh smoke, after handing one to Bill, who said he'd try it, although he preferred the old corncob.

"Confound it Joe. I'm afraid of resting and waiting for the funeral. It looks to me like the rest that knows no awakening. Sitting here is awfully monotonous. It's like being in a cemetery. That tub, lavatory and closet bowl standing there impress me like mute sentinels in the night. They are beginning to look more and more like tomb stones. There's either something wrong with me or something wrong with the business prospects in this town. And yet there's one plumber in town, who is busy, and that's Jack Hammond. Tell me, Joe, how does he do it?"

"Well now Bill, I'll tell you," replied Joe.

"Hammond is a salesman plumber. He sells as well as installs. Have you seen the wonderful display in his window. Why it's like a regular department store display. People stop and look at the stuff. It's chuck full of suggestions for the holiday buyer. Did you notice the big poster in the window with the words—'Ask Santa Claus to Bring You a Built-in Bath-tub?' And did you see the fine line of vacuum cleaners, hot water heaters, automatic heat regulators and bath accessories?"

"Yes I noticed it the other night," replied Goat.

"You must remember, Bill," continued Joe, "we are living in extraordinary times. The old order of things is changing. We must change with it or be counted out of the running.

"Now listen, Bill. Your name is Goat, but don't worry. I believe that you certainly ought to be able to put the 'go' in Goat. You ought to be able to buck the line of business in this community. Be a real live goat. Don't draw in your horns. Dash right ahead. Horn your way forward.

"Now Bill, why shouldn't a plumber and fitter be a salesman? Can you give me any logical reason why he shouldn't?

"There are so many things that you could handle with profit—so many things that you could carry as a sideline. Merchandising is the thing that is going to be the salvation of many a plumber and fitter this fall and winter. Now there's our friend, Jack Hammond. He is thoroughly imbued with the selling idea. Why I believe if you dropped him off a ship in mid-ocean, he would float around and try to sell something to the fishes."

Forbes reached over and picked up the local paper.

"Look here, Bill. Just look at that advertisement of

Hammond's. Why it's like a regular department store ad. And yet Jack installs stuff."

"Now wait a minute, Joe," interrupted Bill. "How would you advise me to go about working this change in my method of doing business?"

"Well, the first step is this: Get out of the alley location. Pick out a place over on Main Street, where there is life and activity. You've got to be where people will see you. Otherwise, what's the use? Proceed to put in a window and showroom display that will be right up to snuff."

Forbes then reached into his grip and brought out a trade paper: "Now here, Bill, is an article—'Things the Master Plumber Can Handle.' Just keep it and read it. There are some good pointers in it. And above all things don't neglect to advertise. Get up some snappy copy and

"Taking a good squint at the window, I reckon," observed Jack.

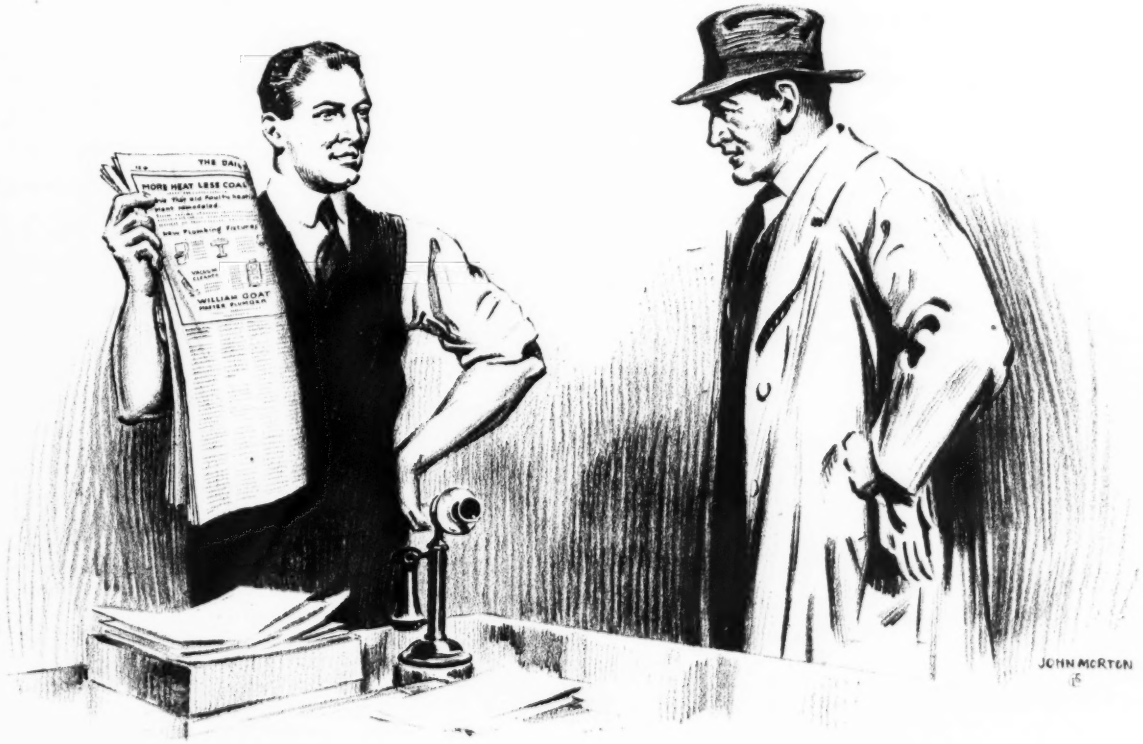
"Yes I was," answered Bill, "and I must confess that you have a display that is a display."

"Getting the merchandizing fever? Is that it?" asked Jack.

"Well yes, in a way. The fever temperature is steadily rising," responded Bill.

"That chap Forbes inoculated me with the germ of the fever this morning, and it made me so restless that I wandered over to look at your window."

"Yes," observed Jack, "Forbes is certainly some salesman. He has something in his kit besides his goods—something on his mind besides his price list. He has ideas—co-operation—to offer you, if you will accept them. I'll tell you, Bill. You just let that fever grow until it



"There's a Quarter-Page of Advertising in the Newspaper," said Bill.

run it at least several times a week in your local paper."

Forbes lit another cigar.

"Well, Bill, I've got to make a jump to Zanesville, and I'll see you in three or four days. My advice to you is to get out and establish yourself on Main Street."

That evening Bill was among the spectators, who stood gazing into Jack Hammond's illuminated display window. He was surprised at the number of people who would pause and observe the array of things on display.

Jack had gone home at 7 p. m., but his place was always illuminated until 9:30 p. m. Bill had no particular admiration for Jack, but he did admire that show window. It was 100 per cent classy.

Bill turned away from Hammond's window and was about to start down the avenue, when he almost collided with the gentleman whose window he had been admiring.

"Well for the love of Mike!" declared Jack.

"Hello there, Hammond. How are you?" returned Bill.

rises to one-hundred degrees or over. It's a mighty healthful fever. Business men grow fat on it—it's money fat they acquire, and if you don't believe me, just ask Smith my banker."

When Forbes arrived in town again, he went around to see Bill, but found that he was no longer in the alley location. He noticed a poster tacked to the door—"Moved to 500 Main Street."

Joe soon found the new place and was amazed to note the progress that Bill had made. The display window was pretty attractive, and while it couldn't be said to equal Hammond's window, the indications were that it wouldn't be long before it would be right in the same class.

"Bill!" exclaimed Joe. "The germ of the merchandizing fever has certainly begun to develop in your system."

"There's a quarter page of advertising in the newspaper," said Bill. "I've set forth the needs of the season,

calling the houseowner's attention to the necessity of saving fuel through the remodeling of faulty heating systems, and here I call attention to the need of overhauling leaky plumbing fixtures, and then here I wind up with some of the various bath accessories, vacuum cleaners, water heaters, etc., that I sell and will install.

"My name may be Goat, but I've taken your advice and have decided to make a drive on my name and put the 'go' in Goat."

"Or the 'Go-at-it' in Goat," observed Joe.

Joseph E. Pierson.

Joseph E. Pierson, secretary of the Robinson Furnace Co., of Chicago, died at his summer home at Cassopolis, Mich., on Tuesday, October 29th. His wife survives him.

George L. La Tourette.

George L. La Tourette, assistant manager of the Cedar Rapids Pump Co., of Cedar Rapids, Iowa, died at his home in that city on Sunday, October 20th, according to announcement just issued by the company.

Thomas F. Claugherty.

Thomas F. Claugherty, a master plumber recently engaged in government work in Maryland, died at his home at 192 Westville Street, Dorchester, Boston, Mass., on October 12th. Death was due to pneumonia following an attack of influenza.

Antonio Pio.

Antonio Pio, who conducted a plumbing establishment at 1 Holden Court in the North End section of Boston, was found dead in a small room in the rear of his place of business on October 24th. He was 74 years old and death was due to natural causes.

Frank Gerke.

Frank Gerke, a plumbing contractor at 4529 North Kedzie Avenue, Chicago, died at his home in this city on Tuesday, October 22nd, of influenza, in his 43rd year. Mr. Gerke had been engaged in the plumbing business since 1903. He was an esteemed member of the Chicago Master Plumbers' Association. His wife and two children survive him.

Thomas F. Kewley.

Thomas F. Kewley, junior member of the plumbing and heating firm of Thos. Kewley & Son, of Toledo, O., died recently at his home in that city after two months' illness, in his 45th year. Mr. Kewley was a member of the Masonic fraternity. His parents, two brothers and a sister survive him.

James T. Bannon.

James T. Bannon, who previous to his retirement a few years ago, had been engaged in the plumbing business at Olneyville, R. I., for 35 years, died at his home at Arctic City, R. I., October 23rd. He was 60 years of age and was a native of the State, in which he had always made his home. A widow and four children survive him.

George Sligo.

George Sligo, of the Ruud Manufacturing Co., Pittsburgh, Pa., died at Camp Gordon on Friday, October 11th, from pneumonia. Mr. Sligo represented the Ruud Mfg. Co. in the Middle South for more than five years. In August this year he enlisted in the Reserve Officers' Training School and was assigned to Camp Gordon, where he entered upon his new duties September 1st. Here he was making such progress that he expected early assignment to France, when the fatal illness overtook him. A lone relative, his sister, survives him.

Gus Hanson.

Gus Hanson, senior member and founder of the plumbing and heating firm of Hanson Bros., in Oklahoma City, Okla., died at his home in that city on Saturday evening, October 12th, of pneumonia, following Spanish influenza. Mr. Hanson was born in Larned, Kans., August 21, 1874, and came to Oklahoma City in 1889. He opened the first plumbing establishment in that city in the middle of the nineties. Mr. Hanson belonged to several fraternal organizations, and he was treasurer of both the Oklahoma State and the Oklahoma City Associations of Master Plumbers. His wife, a son and a daughter survive him.

MODERN FUEL TESTS.

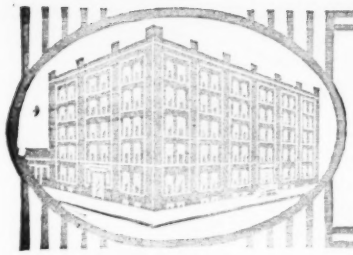
There was a time—and that, not so long ago—when the purchaser of fuel was well satisfied with his purchase after making sure that the amount ordered, whether it was measured in pounds, tons, or gallons, was delivered to him in full, says "Scientific American." But in these days of scientific management the large purchaser of fuel is no longer contented with the knowledge that he has received the full measure in bulk; for, he argues, the object of purchasing fuel is to obtain a certain amount of heat and power rather than so many units by weight or liquid measure. Pounds, tons, or gallons are meaningless terms to the modern fuel purchaser, except when translated into heat and power units.

In measuring the heating value of fuels an instrument known as the calorimeter is employed. Its principle of operation consists in imparting the quantity of heat to be measured to a known mass of water or some other suitable substance which is placed in a vessel or calorimeter of known thermal capacity, and observing the rise in temperature of the water or other substance.

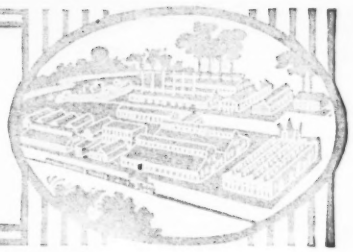
The modern way of measuring the heat value of fuel is by means of a Berthelot-Mahler combustion calorimeter. The fuel to be tested is placed in a steel reservoir or bomb, which is then hermetically sealed. The latter consists of a heavy steel casing with a screw top, and lined inside with a non-corrosive surface such as platinum. Passing over the fuel is a fine wire of platinum or iron, through which an electric current is passed at the desired moment. The bomb, by means of a valve in its cover, is charged with compressed oxygen from a tank, following which it is placed in the calorimeter chamber.

A thermometer graduated in hundredths of a degree permits readings to be taken of the water in the calorimeter chamber at frequent intervals until the temperature is practically constant. The electric circuit is then closed, causing the incandescent wire within the bomb to fire the fuel. The heat from the combustion is imparted through the steel walls of the bomb to the water in the calorimeter chamber, and from the rise in temperature of the known weight of water the quantity of heat can be deduced. Such precautions as the careful heat insulation of the calorimeter chamber and the constant stirring of the water or other liquid are incorporated in the test, in order to insure the greatest accuracy. The thermometer is read by means of a high-powered telescope, so that the thermometer reading can be estimated to the one thousandth part of a degree.

Architect Wellington Smith, Butte, Mont., has completed tentative plans for the proposed $750,000 new high school building to be erected in that city.



Among the Wholesalers and Manufacturers



COMPANIES RECENTLY INCORPORATED.

The Eureka Flux & Solders Co., of Chicago, has been incorporated with a capital of $2,500, to manufacture solder and specialties. The incorporators are Emil Lesser, Abraham Gutmann and Frank Pipla.

The Lincoln Way Brass Foundry Co., of South Bend, Ind., has been incorporated with a capital of $18,000, to manufacture plumbing specialties. The incorporators are Charles Heckathorn, Henry Johnson and Sherman P. Stults.

Atlas Brass Foundry, of Los Angeles, Cal., has been incorporated with a capital of $10,000, by W. M. Anderson, Frederick W. Heiser and Charles W. Lyon.

COMPLETES LARGE ADDITION TO ITS PLANT.

The Detroit Valve & Fittings and Detroit Brass Works, of Detroit, Mich., has just completed a one story addition to its plant, 75 by 150 feet in dimensions. The addition will be used for offices and stock rooms, which makes it possible for the company to use the old stock rooms and offices for additional manufacturing space.

PEERLESS PACIFIC CO. IN NEW AND LARGER QUARTERS.

The Peerless Pacific Co., of Portland, Ore., has just moved from 9-11 North Front Street to new and larger quarters at 66-70-72 North Front Street, and is now carrying mill, steam and heating supplies as well as plumbing goods. W. S. Babson is general manager of this company.

GEORGE P. JACOBS CALLED BY DEATH.

George P. Jacobs, founder and proprietor of the plumbing and heating supply business of Geo. P. Jacobs & Co., 272-276 South Ninth Street, Brooklyn, N. Y., died at his home in that city on Friday, October 18th, in his 71st year. He was born in Brooklyn and had been engaged in the supply business about forty years. His wife, a son and two daughters survive him.

NEW YORK CHAPTER A. S. H. & V. E. OPENS 1918-1919 SEASON.

The New York Chapter of the American Society of Heating and Ventilating Engineers opened its 1918-1919 season of monthly meetings on Monday evening, October 21st, at the Building Trades Club, Thirty-third Street, New York. The evening's activities were started as usual with an excellent dinner.

In opening the meeting President P. H. Seward read a letter from President F. R. Still, of the parent society, asking that a committee be appointed by the Chapter to aid the Committee on Research in collecting a fund to take up the establishment of basic scientific facts bearing on its field which had already been endorsed by the Bureau of Mines of the Government, offering laboratory space, steam and labor in the Bureau's laboratory in Pittsburgh.

The committee will later be appointed by the directors.

President Seward expressed his gratification over the spirit of the members in their effort to continue the good work done in the past, as reflected in their attendance. He announced that at each succeeding meeting some entertaining feature would be introduced into the program as a diversion from dry technicalities.

He also announced that the New York State Fuel Administrator had shown his appreciation of the work of a committee which had been appointed at the Administrator's request, by putting in force in every county in the state its recommendations about the management of the heating apparatus in school buildings.

The technical feature for discussion at the meeting was the report of a committee appointed by Mr. Seward at the request of the New York City Board of Education to aid in the response to the question of the Board of Health as to why the installation of mechanical heating and ventilation systems in schools should be continued in view of a report of Dr. Josephine Baker, of the Bureau of Child Hygiene, to the effect that natural ventilation through the agency of open windows was better. In the absence of Chairman Perry West, A. S. Armagnac presented the report, which deprecated a discussion between methods, and stated that temperature, humidity, dust and odors were the factors in a condition, and that after establishing the essential conditions the method could be selected.

An entertaining feature of the gathering was an instructive lecture by James A. Donnelly, chairman of the October Meeting Committee, on "The Action at the Battle Front in France," accompanied by a number of lantern slides showing scenes at and near the trenches.

In closing, Chairman Seward announced that the next meeting, which is to be held on Monday evening, November 18th, will be devoted to consideration of a report of the Committee on Coal Requirements for House Heating.

WAR TRADE BOARD MISSION GUESTS AT A "DISCUSSION LUNCH."

The members of the American War Trade Board Mission to Europe were the guests of the directors of the American Chamber of Commerce, in London, recently at the Carlton Hotel, at a "discussion lunch." This was in accordance with a plan at present being carried out by the American Chamber of Commerce for bringing about a better understanding, both by Americans and by British of Anglo-American trade problems. A great deal has already been accomplished in removing misunderstandings and sources of friction and several tendencies toward mutual trade action between the two countries have been strengthened. A number of American and

British Government officials including Sir Albert Stanley and Sir Arthur Steel-Maitland have been the guests of the chamber.

The vital necessity for making clear in all reconstruction proposals that America is truly disinterested and unselfish in her participation in this war was emphasized not only by Mr. Cassatt, president of the chamber, but also by the Hon. Leland L. Somers, chairman of the War Industries Board Mission. Possible plans for arranging that the reconstruction proposals of the two countries should be kept in harmony were discussed, and the present friendly attitude of the most important British business men and government trade officials was pointed out to the mission by the directors of the chamber.

THE ANNUAL MEETING OF THE NATIONAL FOUNDERS' ASSOCIATION.

The National Founders' Association will hold its twenty-second annual convention at the Hotel Astor, New York, November 13th and 14th. As usual the administrative council of the association will meet the day before and on the evening of that day will be held the dinner of the alumni, composed of members of former administrative councils. The usual convention banquet will be held on Wednesday evening, November 13th.

NEW BUILDING CONSTRUCTION.

The most notable contracts awarded last week for the construction of new buildings, as recorded by "The American Contractor," were the following:

Government Housing.

$180,000 housing development, Pensacola, Fla.

$300,000 housing, Newport, R. I.

$3,000,000 housing, Norfolk, Va.

$250,000 housing (31 houses), Boston, Mass.

Other Government Contracts.

$300,000 training camp extension, Hingham, Mass.

$2,468,000 capital building, Mineola, L. I., N. Y.

$1,000,000 hospital buildings, Walter Reid Hospital, Washington, D. C.

$194,000 mine filling plant, Yorkton, Va.

$700,000 light machinery and electric shop, Brooklyn, N. Y.

$10,890,000 camp (addition), Mineola, L. I., N. Y.

$300,000, one hundred bungalows, two stories, Bridgeport, Conn.

$150,000 post office building (alterations), Providence, R. I.

$1,000,000 hospital buildings, Wards Island, N. Y.

$5,000,000 engineers' camp, Ft. Leavenworth, Kansas.

$1,037,000 improvement, etc., U. S. Penitentiary, Atlanta, Ga.

$600,000 emergency hospital, Washington, D. C.

$230,000 gypsum composition roof slabs, ordnance plant, Charleston, W. Va.

$150,000 Federal Reserve Bank, Dallas, Texas.

Railroad Construction.

$100,000 engine house, Smithfield, W. Va., Baltimore and Ohio Railroad.

$200,000 round house, South Amboy, N. J., Raritan River Railroad Co.

State and Municipal Work.

$330,000 hospital, Detroit, Mich., City of Detroit Board of Health.

$150,000 armory, Iowa City, Ia., for the State University of Iowa.

$125,000 heat, light and power plant, Detroit, Mich., Board of Education, Chas. A. Gadd, business manager.

SEPTEMBER FOREIGN TRADE REACHED NEW LEVEL.

For the sixth time during the present year the value of the imports of merchandise for the current month has exceeded those for the corresponding month of any previous year, and for the fourth time this year the value of the exports for the current month has exceeded those for the corresponding month of any previous year.

Imports for September were $262,000,000, an increase of nearly $26,000,000 over September, 1917, but a decrease of $10,000,000 from August this year. For the nine months ending September, 1918, the imports were $2,322,000,000, an increase of $40,000,000 over the corresponding period of 1917.

Exports for September amounted to $550,000,000, an increase of nearly $100,000,000 over September, 1917, and $20,000,000 over August, 1918. Exports for the nine months were $4,561,000,000, a slight decrease as compared with last year, but an increase of $610,000,000 over the corresponding period of two years ago.

Imports of gold were $2,600,000 during September and $56,500,000, for the nine months. Exports of gold were $2,280,000 and $34,260,000 for the two periods respectively.

Imports of silver were $7,170,000 for September and nearly $55,000,000 for the nine months, while exports of silver amounted to $10,300,000 and $165,000,000 respectively.

AMERICAN CHAMBER OF COMMERCE IN LONDON AND THE NATIONAL TRADE MARKS BILL.

The American Chamber of Commerce in London, representing all large American firms doing business in Great Britain, has reached a definite conclusion on the proposed American national trade marks, after long and thorough consideration. The final resolution is as follows: "This chamber agrees with the principle of the bill in so far as it will assist in the protection of American markets abroad, provided: (1) that the mark contains no emblem or device which would be considered in foreign markets as any indication or guarantee of quality and that it shall be a mark of origin in words only, and (2) that it shall be used only in combination with registered American private marks."

FUEL CONSERVATION IN ENGLAND.

The "British Board of Trade Journal," a government publication, has just announced that four hundred experts have been appointed by the coal controller to consult with and advise steam-power users how to eliminate waste. As the result of an inquiry by the Coal Control Technical Department it is clear that tremendous wastage of coal is going on which could be prevented. It will, however, take several years to recover the whole of this loss, even if a supreme effort is made by all the industrial firms, as it is impossible to install more efficient plants while the war is on. Another cause of wastage of coal is the employment of unskilled stokers, and, unfortunately, there are today perhaps more men of this description than at any other time, as so many skilled stokers have joined the army.

There are 45,000 users of steam plant in Great Britain. Up to the present reports on 364 firms have been carefully scrutinized, and it is estimated that a saving of approximately 106,000 tons will result. This saving can be effected without any serious alteration to plant in the following directions:

1. Obtaining greater efficiency in the combustion of fuel.
2. Education of stokers.

3. Utilizing the heat in the gases to better advantage.
4. Using exhaust steam for heating feed water.
5. Adjusting engines to more efficiently use the steam generated.
6. Using the hot water from the condenser discharge for boiler-feed purposes instead of cold water.
7. Effective lagging of steam pipes.
8. Disconnecting steam pipes not in use, etc.

Personal Mention

Robert L. Gifford, president of the Illinois Engineering Co., Chicago, left last week for his winter home at Pasadena, Cal.

F. M. Clymer, secretary and treasurer of Becker Mfg. Co., of Marietta, Ohio, visited New York last week.

J. B. Brazier, vice-president and general manager of the Powhattan Brass & Iron Co., of Ransom, W. Va., was in New York City last week.

D. W. Ritchie, sales agent for Philadelphia and vicinity for the Monitor Bi-Loop Radiator Co., of Lancaster, Pa., has had a slight attack of Spanish influenza.

First Lieutenant Benjamin Nelson, formerly sales engineer of the Chicago office of Warren Webster & Co., of Camden, N. J., who has been a machine gun instructor at Camp Humphrey, Augusta, Ga., sailed for France recently.

G. H. Young, Chicago manager of the Burnett-Larsh Mfg. Co., of Dayton, O., and P. D. Bennett, sales representative of the company, have just returned from an extensive auto trip through eastern Illinois. The trip was not without adventure. "We had five punctures to our credit," said Mr. Young.

Joseph A. Maynard.

Joseph A. Maynard, of Boston, president of the McAuliffe Non-Siphoning Trap Co., and director of the F. W. Webb Manufacturing Co., of that city, has again shown his extraordinary ability as a Liberty Bond salesman. Mr. Maynard, who in addition to his other duties, holds the office of surveyor of the port of Boston, has been awarded a silver cup in recognition of his achievements and those of his ward committee in obtaining the largest number of subscriptions per capita of any Boston ward committee in the Fourth Liberty Loan drive. The cup was offered by N. Penrose Hallowell, chairman of the New England Loan Committee and will be placed in Mr. Maynard's office beside a similar one which he took in the drive for the Third Liberty Loan. Mr. Maynard's committee this time obtained 16,096 subscriptions to the total value of $1,701,000. The subscribers represented 26 9/10 of the total population of the district. Although two other ward committees turned in a larger amount in subscriptions Mr. Maynard's committee led all others by a wide margin in the number of individual subscribers.

Ralph M. Ensign, heating engineer for the Phillips-Getschow Co., of Chicago, has just received his appointment from the Adjutant General as second lieutenant in the Quartermaster's Department. Mr. Ensign is a member of the American Society of Heating and Ventilating Engineers.

B. E. Culbertson, of Crane Co., Chicago; R. L. Ottke, of the Standard Sanitary Mfg. Co., Pittsburgh, and E. C. Regester, of the Hoffmann & Billings Mfg. Co., Milwaukee.—From "Domestic Engineering" Photo, taken at the St. Louis Convention of the National Association of Master Plumbers.

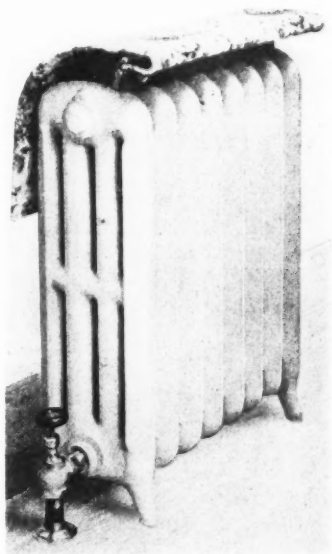
R. B. Flershem, chairman of the sales committee of the American Radiator Co., Chicago, has the sympathy of his many friends in the trade on account of the death of his wife, which occurred at Buffalo, N. Y., on Tuesday, October 22nd. An attack of influenza which developed into pneumonia was the cause of Mrs. Flershem's death.

M. C. Beard, well known in the heating trade in New York, has joined the sales force of the Brooklyn branch of the Pierce, Butler & Pierce Manufacturing Corporation. Mr. Beard was formerly connected with the Thatcher Furnace Co., of New York City.

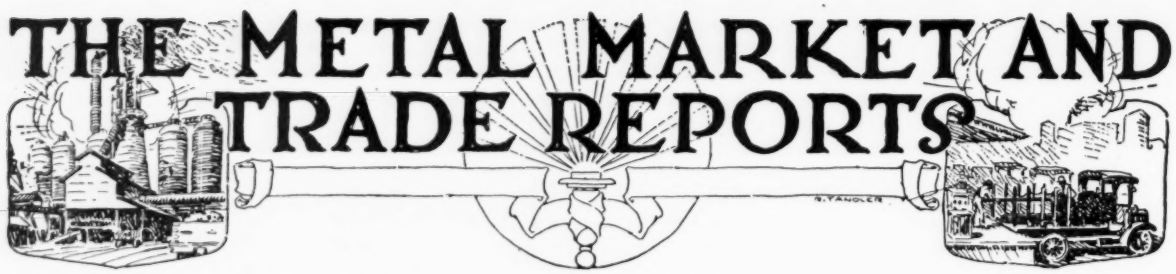
NEW APPLIANCES AND IMPROVEMENTS.

A New Radiator Cover Frame.

A new device of interest to heating contractors and their customers has just made its appearance in the form of a radiator cover frame, as shown in the accompanying illustration. By using this device it is said that dust from currents of the heated air is deposited in the dust pocket of the radiator cover instead of up against the walls. These covers are easily removed and laundered and the cover frame supporting them at the proper distance above the radiator increases the efficiency of the radiator. The frame is described as consisting of two brackets and two rods which conform to the shape of the radiator. It is finished in black enamel, but can also be furnished in nickel plate, polished brass or oxidized copper.



THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

Peace prospects are not interfering with the steel producers in their effort to carry out the program of the Government already outlined. The pace has been well maintained, while tonnages, allocated to rail and wire mills, show that there is to be no modification in the program. The point in which the industry is most vitally concerned is how war contracts will be adjusted at the end of hostilities, and in this connection it is noted that some of the contracts recently made contain provision covering this contingency, while reports from Washington are that the Government is preparing a statement defining a general policy.

Pressure on the wire and rail mills has increased lately because of allocations of 40,000 cars for France and 200,000 tons of barbed wire for the United States and Entente, and a large tonnage of rails for shipment to the American Expeditionary Forces. The shipbuilding plants are well supplied with fabricated plates and shapes, and the immediate demand upon the mills is less urgent. Steel output has not been seriously affected by the influenza as shown by the report of the United States Steel Corporation, which showed production to be 99 per cent of capacity last week.

Interest of the iron trade centered last week in the increasing allocations of tonnage for delivery over the first half of 1919, and the booking of contracts for foundry iron for delivery in the first quarter by Virginia interests. Allocations of pig iron for first half 1919 delivery are expected to continue in good volume, as consumers are anxious to cover their requirements.

Production of pig iron is being pushed as rapidly as possible, but the supply is still short of the unusual requirements. Prices are based upon shipment from Pittsburgh, Birmingham or Buffalo. The base price on No. 2 foundry is $34, f. o. b. furnace, and standard Bessemer at $35.20, f. o. b. furnace, subject to the following changes from previous delivery prices, i. e., (a) pig iron produced in Virginia, Tennessee and Birmingham districts and south of the Potomac and Ohio rivers, including St. Louis, Mo., but not those furnaces bordering on the Ohio River, shall be sold on the basis of f. o. b. Birmingham. (b) Iron furnaces, located east of the Allegheny Mountains and north of the Potamac River, will be sold on the basis of f. o. b. Pittsburgh. (c) Iron from all other producing points shall be sold on basis f. o. b. furnace.

Copper.

The proposed meeting of copper producers and the War Industries Board to discuss a revision of prices was called off and postponed for an indefinite time, which has caused the trade to settle down to the regular routine. The market is restricted by the shortage of supplies for ordinary commercial purposes as all available output is being absorbed by war contracts, distributed under priority orders, and the supply is not sufficient. Influenza has cut production about 20 per cent, it is estimated. Prices are established at 26 cents per pound for carload lots, and 27.30 cents for lesser quantities.

Tin.

Tin is rapidly approaching the position of other controlled metals. Importations are restricted by the War Trade Board in accordance with the international agreement, full details of which are not announced as yet, so that the situation is little different from what is anticipated, when the plan is announced. The market has been extremely dull during the past week, the chief interest being centered in the movement of importers to form an association to protect their after-war business. The normal price for tin in the New York market for spot has ranged under 80 cents.

Lead.

The situation in lead remains about the same from day to day, as the metal is scarce and its distribution is entirely controlled by the Lead Committee. Essential producers get their supply as promptly as the situation permits. Prices remain unchanged at 8.05 cents per pound for New York delivery and 7.75 cents East St. Louis.

Spelter.

An easier tone developed in the spelter market last week. The buying interest is only fair, and the volume of business of moderate proportions. An agreement between the smelters and Joplin ore producers is not expected to influence the market prices in New York, as there is no certainty that the plan will be adopted because some opposition is developing. Prime Western is quoted New York delivery, spot, at 9.05 to 9.25 cents, and East St. Louis at 8.80 cents.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum (in 100-pound lots)	49 cents per lb
Antimony, Chinese and Japanese	16 cents per lb
Solder, No. 1	52 cents per lb

New York Old Metal Market.

The following prices are current for old metals:

	Buying.	Selling.
Copper, heavy	21 to 22 cents	23½ cents
Copper, light	20 to 21 cents	23 cents
Brass, heavy	14 to 14½ cents	15¾ cents
Brass, light	11 to 11½ cents	12½ cents
Brass turnings	14 to 14¾ cents	15½ cents
Brass clippings	15½ to 16½ cents	17¼ cents
Tea lead	5¾ to 6¼ cents	7 cents
Aluminum clippings	30 to 32 cents	33 cents
Solder joints	14½ to 15 cents	16 cents
Lead, heavy	7 to 7¼ cents	7½ cents
Cocks and faucets	18½ to 19 cents	20 cents
Mixed babbitt	8 to 8¾ cents	9½ cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

	Buying.	Selling.
Heavy yellow brass	15 to 15½ cents	16½ cents

Brass, light	11	to 11½ cents	13	cents
Brass, medium	12¼	to 12¾ cents	13¾	cents
Brass clippings	15½	to 16 cents	17	cents
Red brass	21½	to 22 cents	23	cents
Cocks and faucets	17	to 18 cents	19	cents
Copper, heavy	23	to 23½ cents	24½	cents
Lead, heavy	6¾	to 7 cents	7½	cents
Tea lead	5¾	to 6 cents	6½	cents
Lead dross	4½	to 5 cents	6	cents
Solder joint	15¼	to 15¾ cents	16½	cents
Old iron pipe, per ton		**$24.00**		**$25.00**

The Pipe Market.

The War Industries Board has recently revised the price list for pipe, and after delays in printing, etc., it was put into effect a few days ago.

Quotations on less than car lots of full weight steel pipe are now as follows:

	Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.
⅛ to ⅜ inch	37	12	....	....
½ inch	40	27	....	....
¾ to 3 inch	43	31	....	....
2 inch	....	....	37	25
2½ to 6 inch	....	....	39	28
7 to 12 inch	....	....	37	25
12 to 14 inch	....	....	28	....
15 inch	....	....	25	....

The quotations apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong steel pipe in less than car lots, quotations are as follows:

	Extra Strong				Double Extra Strong			
	Plain Ends		Plain Ends		Plain Ends		Plain Ends	
	Butt Weld		Lap Weld		Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.
⅛, ¼ and ⅜ inch	33	17	....	....	....	....	....	....
½ inch	37	26	....	....	29	20	....	....
¾ to 1½ inch	41	30	....	....	32	23	....	....
2 to 2½ inch	42	31	....	....	34	25	....	....
3 inch	42	31	....	....	....	....	....	....
2 inch	....	....	35	25	....	....	27	19
2½ to 4 inch	....	....	37	27	....	....	29	21
4½ to 6 inch	....	....	36	26	....	....	28	20
7 to 8 inch	....	....	33	21	....	....	24	12
9 to 12 inch	....	....	28	16	....	....	....	....

With threads only, the basing discount is 1 and 1½ points lower. With threads and coupling the basing discount is 3 points lower. The quotations apply to all quantities less than car lots.

Quotations on full weight genuine iron pipe, in less than car lots, are as follows:

	Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.
⅛ and ¼ inch	14	+11	....	....
⅜ inch	15	+10	....	....
½ inch	19	2	....	....
¾ and 1 inch	24	9	....	....
1¼ inch	24	9	8	+7
1½ inch	24	9	16	3
2 inch	....	....	17	4
2½ to 6 inch	....	....	19	7
7 to 12 inch	....	....	16	4

These quotations are f. o. b. Pittsburgh, and apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong genuine wrought iron pipe, with plain ends, and in less than car lots, the quotations are as follows:

	Extra Strong				Double Extra Strong			
	Butt Weld		Lap Weld		Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.
⅛ to ⅜ inch	13	+ 3	....	....	....	....	....	....
½ inch	18	+ 6	....	....	6	+6	....	....
¾ and 1 inch	24	10	....	....	11	+1	....	....
1¼ inch	24	10	9	+6	11	+1	....	....
1½ inch	24	10	16	+3	11	+1	6	+6
2 inch	....	....	18	+6	....	....	6	+6
2½ to 4 inch	....	....	20	+9	....	....	8	+1
4½ to 6 inch	....	....	19	+8	....	....	7	+2
7 to 8 inch	....	....	11	List	....	....	....	....
9 to 12 inch	....	....	7	+5	....	....	....	....

These retail prices are f. o. b. Pittsburgh, and apply to all quantities except in car lots. With threads only, the basing discount is 1½ points lower. With threads and couplings, the basing discount is 3 points lower.

To ascertain the price in your city, deduct the proper less-than-carload freight rate from Pittsburgh to that city. Example: Base price on ¾-inch black steel pipe is 43 per cent, Pittsburgh, the less-than-carload rate to Patson is 17 cents, and the price, therefore, freight allowed to Patson, 41.3 per cent; on galvanized, 29.3 per cent. All other sizes to be figured on a comparative basis.

THE AMERICAN ZINC INSTITUTE.

In a circular issued by the organization committee of the American Zinc Institute, it is said that the institution was originated for the purpose of creating a spirit of co-operation and co-ordination among the various factions in the trade and for bringing about a steadiness or stabilization of the industry. It is further stated, however, that it is not the purpose to limit the usefulness of the Institute to the objects above set forth but to make it also the means of:

1. Educating the public in new uses for zinc. (Zinc is, and probably will continue to be, comparatively plentiful and relatively cheap; there is a shortage in tin, copper, iron and steel, and, as fast as the buying public learns that articles made from zinc are as durable and as attractive as and cheaper than those made from other metals, the demand for zinc will broaden to the advantage of the miner and of the smelter.)

2. Establishing a statistical bureau. (Figures on production and consumption of zinc throughout the world will be gathered and sent to Institute members. This information should prove equally invaluable to the miner and to the smelter.)

3. Increasing largely the exportation of zinc. (This vitally concerns our participation in world trade after the war, and is a group work which should be immediately undertaken.)

4. Suggesting improvements in organization and management through the adoption of advanced methods.

5. Promoting sound, economic conditions in the industry and putting an end to unsound and uneconomic business practices which are incompatible with public interest.

MINING ON ISLE OF PINES.

The Isle of Pines promises to become an important producer of iron, copper, and other ores. Eleven mines have already been located, though only two are being actively developed as yet. At one of these, an iron mine near Nueva Gerona, shafts have been sunk to a depth of 117 feet, and, apparently, fine ore is being found. Assays of samples of this ore are being made in the United States and Cuba. A copper mine, also near Nueva Gerona, only awaits the arrival of the necessary machinery to begin development work.

Little has been done at the other mines, chiefly because their boundaries have not yet been officially established. A few days ago the chief Cuban Government mining engineer arrived, accompanied by two assistants, and the work of establishing the boundaries is now under way.

The Cuban Government is taking a most active interest in the development of these mines, four of which are said to be owned by Americans, with an American engineer as manager, and the others by Cuban corporations.

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Chicago and Vicinity.

The Murphy Plumbing Co., of 23 East Congress Street, has been awarded the contract for the installation of the plumbing systems in new additions and in reconstruction work at the Fort Sheridan barracks, Fort Sheridan, Ill. The cost of the reconstruction work, including the erection of a new military hospital, is estimated at $4,000,000.

The American Heating & Plumbing Corporation, of 189 North Clark Street, will install heating and plumbing systems in a hospital, to be erected at a cost of $300,000, at 802-808 South Racine Avenue.

The Advance Heating Co., of 105 North Clark Street, has secured the contract to install a modern heating system in a factory, to be built at a cost of $50,000, on Racine Avenue near Center Street.

The A. J. Fisher Co., of 3919 Lincoln Avenue, will install the plumbing in six stores, a restaurant and club rooms at Twenty-second Street and Wentworth Avenue, the total construction cost being $40,000.

The Jacob G. Weber Co., of 2841 North Clark Street, will remodel the plumbing system in a bank at 4738 Broadway, for the Sheridan Trust & Savings Bank.

F. K. Pearson, of 2643 North Kedzie Avenue, has been awarded the contract to install the plumbing in a large boiler house to be built at Twelfth Street and Fifty-fourth Avenue, Cicero.

The E. Baggot Co., of 17 East Lake Street, has been awarded the contract to install modern plumbing systems in 174 houses for war workers, to be erected at a total cost of $3,000,000, on Columbia Avenue, between Morton and Brackett Streets, Hammond, Ind.

John J. McAssey, plumbing contractor of Homan Avenue and Lake Street, has the sympathy of his friends in the trade on the death of his fifteen-year-old son, John, who died last week of Spanish Influenza.

Other Cities in the State.

The Moline Heating & Construction Co., of 320 Sixteenth Street, Moline, has secured the contract for the installation of the plumbing systems in 410 workingmen's houses, for the United States Government, at Rock Island. The heating contract went to the Rock Island Register Co., of 1230 Fifth Avenue, Rock Island.

Harry M. Radmacher, of 70 Public Square, Monmouth, will install the plumbing in a warehouse and show rooms to be erected at a cost of $50,000 in that city. The steam heating contract was awarded to Hays & Eastman, also of Monmouth.

Channon & Dufva, of 112 West Seventeenth Street, Rock Island, have been awarded the contract to install the heating system in a bakery, to be erected at a cost of $13,000, at 1107-1119 Third Street in that city. The plumbing will be installed by E. E. Lamp, of 619 Seventeenth Street, Rock Island.

J. P. Quigley, of 47 South Cherry Street, Galesburg, has secured the contract to install the plumbing system in a store and office building, to be erected at a cost of $80,000, at Main and Kellogg Streets in that city.

The Jolly Weiland Co., of Olney, has been awarded the contract to install modern plumbing in a residence, to be built in that city, at a cost of $40,000.

The Leeger Plumbing Co., of Libertyville, will install the plumbing system in a farm residence, to be erected at a cost of $6,000, at Rondout, Ill.

E. C. Wagner, Treasurer of Chicago Master Plumbers' Association, and George J. Dehn, President of the Compound Injector & Specialty Co., of Chicago.—From "Domestic Engineering" Photo, taken at the recent annual meeting of American Society of Sanitary Engineering.

Indiana

Indianapolis and Vicinity.

With the announcement this week that the United States Housing Corporation has acquired several acres of land adjoining the plant of the Stenotype Company, at Mars Hill, a suburb of Indianapolis, W. E. Bash, director of the Indianapolis branch of the service, has announced that this land together with more than four acres provided by the Stenotype Company, will be used for the erection of a large community house and a dozen cottages, capable of accommodating 200 persons, for the housing of women and girls employed at the plant on war contracts. Although the plans for the buildings have not been received from Washington, it is estimated by the project engineer that the community house alone will cost about $8,000. The improvements to be made on the land include water supply, sewers, sidewalks and gutters. Contracts for the heating and plumbing work will be awarded as soon as the plans are received and reviewed. The heating systems in the new industrial buildings that the Stenotype Company has erected, since it has been working on Government contracts, were installed by Callon Bros., of 24 South Alabama Street, Indianapolis, and this firm is also one of those bidding on the plumbing and heating in the new buildings to be erected by the housing corporation. The names of the successful bidders will probably be announced in a few days.

The contract for the installation of the plumbing and

heating in the new $11,000 Y. M. C. A. building, which is to be erected on the grounds of the Indiana State School for the Deaf, in Indianapolis, now used as a vocational training school by the Government, will be awarded soon.

Rauch & Sons, of 40 McLean Place, Indianapolis, have just completed the installation of the plumbing and heating systems in the new residence of Mayo Estie at 4025 Ruckle Street. The hot water heating plant includes automatic regulators, that mechanically control the heat and the temperature of the water throughout the house.

Freyn Bros., of 31 West Michigan Street, Indianapolis, were the successful bidders for the installation of a steam heating plant and a fire protection system in the Marion County Infirmary at Julietta, about ten miles east of Indianapolis.

Other Cities in the State.

Members of the building trades in the Calumet region viewed with much alarm the order issued last month by the priorities division of the War Industries Board, providing that all building or improvement projects not falling in some one of five specified classes should not be undertaken until a permit is obtained from the head of the priorities section, because it would place a serious handicap on the construction of homes in the cities in that territory. Together with representatives of the chambers of commerce in that region they drew up a protest, in which they called attention to the fact that the housing problem is of vital importance to all the cities in that territory, and showing how thousands of homes were needed by workingmen in the industrial concerns there. A committee was then appointed composed of J. Wilson, president of the Hammond Chamber of Commerce; W. J. Murphy, of the East Chicago Chamber of Commerce; H. S. Norton, of the Gary Chamber of Commerce; M. A. Dickover, Hammond builder and contractor, and E. W. Wickey, of the Lake County Council of Defense. This committee went to Washington armed with data and evidence and backed by the formal approval of the county and state councils of defense, soon succeeded in getting permission from the War Industries Board to pass finally on all requests for priorities on building materials. The committee which went to Washington is now the Lake County War Industrial Housing Committee. The headquarters of the committee have been established in the Chamber of Commerce rooms at East Chicago, and a secretary has been appointed to take care of the detail work and check up on the various building operations.

Plumbing and heating contractors in the Calumet region, composed of Gary, Hammond, Indiana Harbor and East Chicago, view with optimism the recent action of the priority section of the War Industries Board in permitting the newly organized Lake County War Industrial Housing Committee to receive and pass upon directly and finally all applications for priorities of building materials of all kinds for the construction of homes. As a result of this, Lake County becomes the first and only county in the United States to secure from the Federal Government the privilege of organizing a War Housing Committee with the power of passing finally on all requests for priorities on building materials. The authority carries with it a federal building license, with license number, which is to be recognized wherever materials are sold.

Terre Haute is now trying to solve the problem of how to provide homes for more than 1,000 employes, who are to be added within the next few weeks to the working force in the various plants occupied in turning out war materials. In addition to the new men that are to be placed at work in order to take care of the big Government contracts, it is estimated that at least 300 families of men already at work are seeking homes. Arrangements were under way to build a large number of small houses this fall, but the plans were stopped as a result of the Government's order curtailing building operations.

The Hipskind Heating & Plumbing Co., of Wabash, was one of the concerns of that city represented at a meeting there last week with the county council of defense to discuss means of providing special mechanical training for men now subject to the draft. A plan was agreed upon whereby the head of the manual training department in the high school would work with the firms represented at the meeting in giving the needed training.

The firm of Hattersley & Son, of South Main Street, Fort Wayne, was the successful bidder for the heating contract on the new factory building to be erected for the General Electric Co.

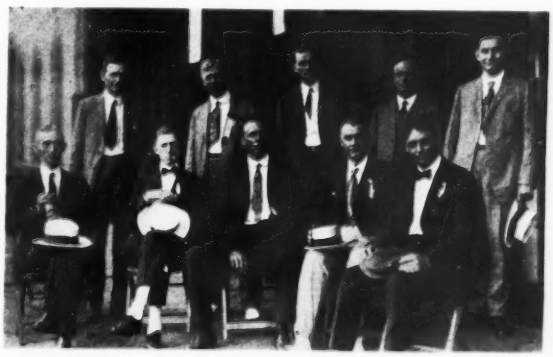
W. H. Dreves, of 108 State Street, Elkhart, has been awarded the contract for the installation of modern plumbing in the new $50,000 Y. W. C. A. building in that city. Mr. Dreves also has a number of smaller contracts on his books.

W. C. Bevins, of Seymour, has been awarded the contract for installing the new heating plant at the Shields High School at that place.

Kansas

Charles Euck, of Atchison, has secured the contract for the installation of a modern plumbing system in Mrs. Virginia Drury's residence in that city.

Frank Hoff, of Wichita, has been awarded the contract for the installation of modern plumbing in C. L. Coleman's new $7,000 residence.



Part of the Kansas Delegation at the St. Louis Convention of the National Association of Master Plumbers.—From "Domestic Engineering" Photo.

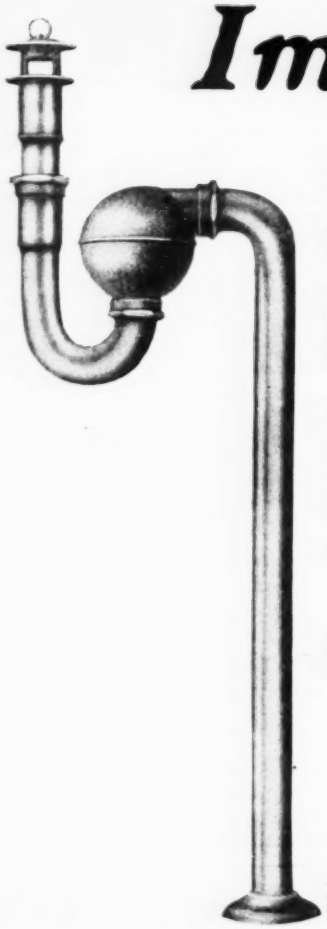
Missouri

St. Louis and Vicinity.

T. J. Sullivan, secretary of the Heating & Piping Contractors Association, in the Odd Fellows Building, reports: "Everything quiet owing to the scarcity of material and the influenza epidemic. The situation is such that we have not had a meeting for a month."

J. M. Ward, of Delmar Building, is to remodel the heating system in C. Bruscher's residence at 4351 Lindell Avenue.

Impossible to Brea



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in diameter, made from drawn brass and is perfectly smooth
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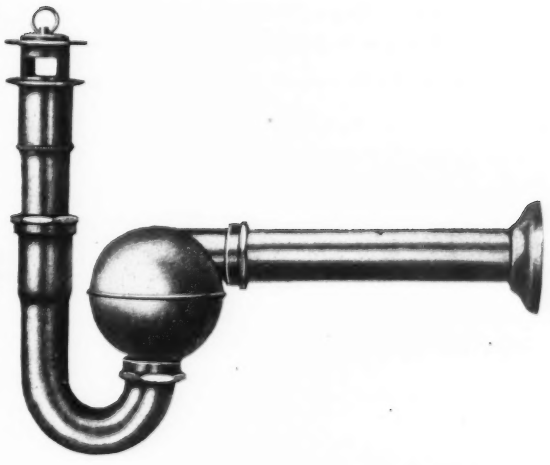

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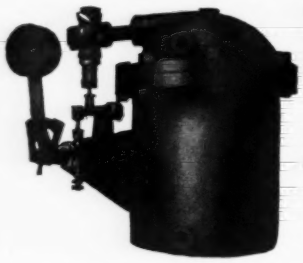
Your Jobber is a WISECO Representative



THE SEASON IS HERE

for overhauling and repairing defective heating plants

A great many steam jobs in your vicinity have failed to give efficient service because of air-bound or water-logged conditions. The owners want them put in order and you can do it by using

The Lytton Thermo Syphon Trap

The Lytton Trap will revolutionize any old one-pipe or two-pipe system and make it give satisfactory service.

Collects the condensation as it forms, also takes returns from below water line, and discharges into boiler irrespective of pressure in boiler or system.

Releases all air—assures perfect circulation and even distribution of heat.

USE THE LYTTON TRAP ON BOTH OLD AND NEW JOBS

Write for Bulletin No. 15

Lytton Manufacturing Corporation

MANUFACTURERS OF

Direct Return, Steam, Vacuum, Lifting and Thermo Syphon Traps; Pressure Reducing Valves, Blow-Off Valves

Franklin, Virginia

Kentucky

Louisville and Vicinity.

Anderson & Schardein, of Louisville, composed of A. J. Anderson and George Schardein, have been very busy at Camp Knox, where they have been laying pipe lines for the new cantonment. This concern installed a pumping station and standpipe, and five and one-half miles of eight-inch pipe lines, and it was all done in eighteen days. Roads had to be made up Indian Hill through dense woods, two bridges had to be built and the woods cleared off, and some ground leveled to permit laying the line, which has furnished water for construction and drinking purposes. Two tanks of 250,000 gallons capacity each were installed, and four pumps, two of large size and two secondary. The temporary pipe lines will be replaced with large lines consisting of wooden pipes, of fir, red cedar, cypress and redwood, bored out, tarred and wrapped with wire. Many miles of this wooden pipe will be installed for sewer and water mains. The size of this undertaking is shown in the fact that the camp will cover 35,000 acres of ground, and will house close to 60,000 men. The large tanks will furnish standpipe pressure, and will be fed by the four pumps, which range from 1,000,000 to 2,000,000 gallon capacity. The water will be taken from Grahampton Springs, and lifted 500 feet to the tanks. About thirty-five per cent of the construction has been completed, but shortage of labor and carpenters has held the work back, and it now appears impossible to complete it before winter sets in hard and fast. The general plumbing contract is held by T. F. Hanley & Sons, of Chicago. M. J. Duffy, of M. J. Duffy & Sons, Louisville, is superintendent in charge of the plumbing work at the camp.

Al Bywater, of Bywater Bros., has been handling a lot of excellent government work in connection with the University of Louisville which is now under Government control. The dental college at Brook and Broadway has been turned into a dormitory, and a mess hall established in a new building at Floyd and Broadway, on the site of the new auditorium building, which has been held up until after the war. Mess halls have also been established at the passengers' depots at Seventh Street and the River, and Tenth Street and Broadway.

E. C. Feldhaus has one of the best church contracts of the year, in a large new church that is well under way at Brook and College streets, for one of the Jewish congregations. The roughing in work is now well along.

Jacob Isaacs has been handling a little new work and much remodeling, but has been finding business a little quiet all season.

Gray & Tomppert have had a few fairly good jobs this season, and have managed to keep going in fairly good style.

A number of leading business men in discussing peace and war results, were of the opinion that there would be no improvement in general conditions until the war was over, but in the event of an early peace, it is believed that things will be dull for a period of six months and then start to hum. It is claimed that office building will be resumed on a larger scale, and that much big work, that has been postponed, will begin. Half a dozen big jobs are being held up in Louisville at the present time, including a new athletic club, the Jewish Hospital

annex, the Louisville Auditorium, the Women's Club and others. A number of prominent business men, who have made big profits out of the war, will undoubtedly construct fine residences after the war is over, and the outlook is considered bright, when war finally ends.

The Liberty Loan was oversubscribed by nearly $3,000,000 in Louisville, while the state as a whole went well over her quota. Louisville went over within six days of the opening of the campaign.

A cool million dollars is being expended by the Louisville Water Company in its improvements to the local plant, which was inadequate to supply the city which is rapidly growing, and Camp Taylor, where more than 50,000 men are quartered. The plant was big enough for all demands until the camp was established, but the latter has taken a larger quantity of water than was at first anticipated, and at that has suffered from weak water pressure. Two 30,000,000 gallons pumps, two 400 h.p. boilers, with chain grate stokers, soot blowers and superheaters have been ordered, and partly installed. A 40,000,000 gallon pump has also been ordered for the Crescent Hill station. The work will not be entirely completed before 1920, when the company will have a pumping capacity of 102,000,000 gallons, which will be ample for all needs for some time to come.

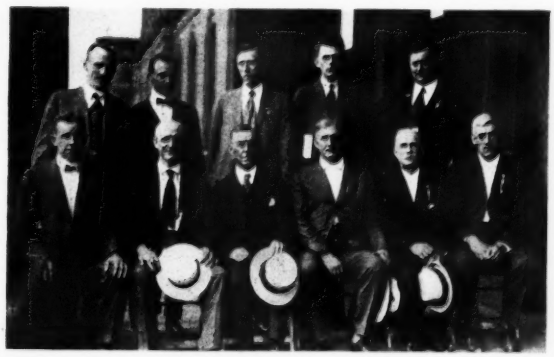
New Jersey

Newark and Vicinity.

F. & W. V. Engelberger, of 139 Jelliff Avenue, have been awarded the contract for the installation of modern plumbing in the Continental Hotel on Broad Street. John D. Lee, of 15 Dewey Street, will install a modern heating system in this hotel.

James Del Guercio, of 72 Cutler Street, will remodel the plumbing and heating in the Church of Our Lady of Mt. Carmel.

Walter A. Lawson, of 45 Clinton Street, will remodel the heating system in the Glass Specialty Co.'s factory at 235-237 Plane Street.



The New Jersey Delegation at the St. Louis Convention of the National Association of Master Plumbers.—From "Domestic Engineering" Photo.

G. Vanaman, of Cape May, has been awarded the contract for the installation of plumbing in the new Y. M. C. A. building at Cape May and in the Wissahickon Barracks for the National War Work Council.

G. A. App & Co., of Bordentown, have been awarded the contract for the installation of modern plumbing in a church being erected in Roebling.

EXCELSO Water Heater

The simplest, cheapest and most efficient means of furnishing a constant supply of domestic hot water.

Can be connected either in vertical or inclined position, to steam or vapor boilers. Does away with the old coil-in-firepot method, which is awkward and expensive to install and short-lived at best.

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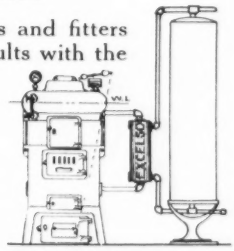

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"Crown"
Patented Knurled-Edge
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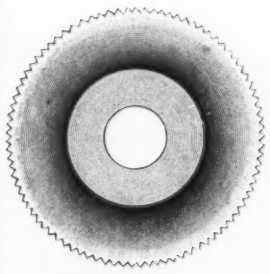

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Note the **diagonally serrated** teeth. Made this way to prevent teeth from breaking off or flattening and to keep a sharp cutting edge. Manufactured in all sizes of Saunders, Barnes, Trimo and Crown types.

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Manufacturers of "Crown" Dies, Die Stocks, Pipe Cutters, Pipe Reamers, Patented Post Pipe Vises, etc.

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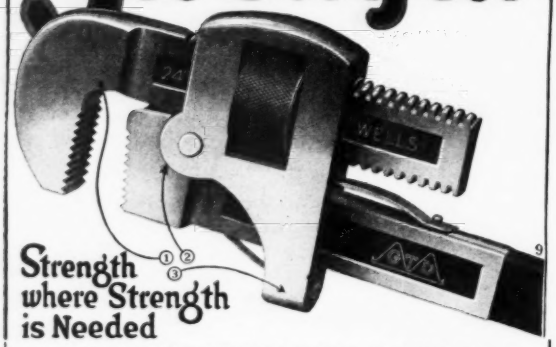

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Special Heat Treatment

In addition the jaws are given a special heat treatment which reduces breakage.

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Every "Wells" Wrench is tested to U. S. Navy specifications and is sold under a liberal guarantee.

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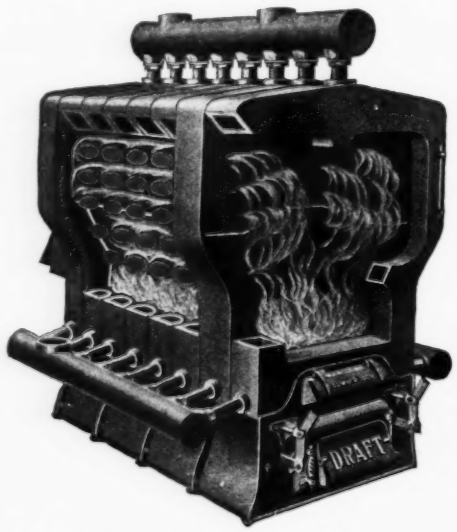

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1801-1825 Diversey Parkway CHICAGO

Pennsylvania

Pittsburgh and Vicinity.

Heating contractors in the district report that, with the near approach of cold weather, they are finding as much business as they can possibly attend to, owing to the shortage of man power. Labor is scarce, and on this account many jobs of an important nature are being delayed. Very little in the way of new construction is getting attention, but in anticipation of difficulties that may arise from a shortage of the usual fuels a large number of concerns as well as private individuals are making what preparations they can to avoid trouble. This is keeping up an activity among certain branches of the trade which reflects prosperity and an encouraging future, when war restrictions will have been lifted.

The local housing corporation has been called into closer co-operation with other governmental activities for a complete survey of the Pittsburgh district. The purpose is to obtain still further efficiency for war work, and the lines, it is said, are to be drawn with even further severity so far as any unnecessary building is concerned. Practically all the operations of the plumbing trades in the Pittsburgh district are now confined to government work, repairs that must be made or alterations for emergency demands. Headquarters for the housing committee and co-operating bodies have been opened in the Chamber of Commerce Building, where regular meetings are in progress.

Owing to the steady increase of the "flu" epidemic here, hardships occasioned by the shortage of labor and other war conditions incidental to the war have been greatly multiplied within the last two weeks. Many members of the various crafts are suffering from the disease and practically all lines have felt the strain more or less. The Master Plumbers' Association has so far had no deaths to report, although several of the best known members have been stricken. All meetings have been temporarily suspended in line with the orders of the state and local boards of health.

Philadelphia and Vicinity

L. T. Bachler, of 152 North Sixth Street, has been awarded the contract for the installation of modern heating in Elliott Fisher Co.'s new warehouse at 1024 Race Street.

W. W. Sutterly, of 237 North Fifty-second Street, will install modern plumbing in the boiler house being erected for the Atlantic Refining Co.

Thompson Bros., 125 North Fifth Street, have been awarded contracts for the installation of plumbing and heating in the storehouse being erected by the Government in the United States Navy Yard. The contracts amount to $12,500.

J. D. Scott, of Coatesville, will install a modern plumbing system in the school being erected in Chester.

Cynwyd Plumbing & Heating Co., of Cynwyd, has been awarded the contract for the installation of plumbing in the new garage being erected by the Girard Trust Co., at Sixty-fourth Street and Church Road.

W. H. Zimmerman, of 1219 Arch Street, will install modern plumbing in the new annex to the Oak Lane School, Oak Lane.

A. Myers, of Coatesville, has been awarded the contract for the installation of plumbing in H. B. Elliott's new bungalow in that town.

The South Bethlehem Plumbing Co., South Bethlehem, will install plumbing and heating systems in a new church in that city.

Rhode Island

A new eleven-story bank building is being erected in Providence for the Rhode Island Hospital Trust Co., and, when finished, the company will have quarters among the finest in the country. James Armstrong, of 219 East Thirty-eighth Street, New York, has the contract for the plumbing work, and Baker, Smith & Co., Inc., of 516 Greenwich Street, New York, will install the heating system.

Albert Reardon, of the plumbing and heating firm of Reardon Bros. & Co., of Providence, has accepted a position in the Bureau of Yards and Docks at Washington, D. C.

Thomas Martin, of Pawtucket, has the contract for plumbing installation in a building on Carter Avenue for Paul Manis.

The McCaffrey Heating Co., of Pawtucket, is to do the plumbing in a house at Silver Spring for Clarence Richards.

Maine

Arthur B. Fels, administrative engineer of the state conservative bureau, has returned from his vacation and taken up his work at the fuel administration headquarters at Portland. Mr. Fels is one of the best known heating engineers in the state, and he plans a systematic study of conditions as regards heating apparatus and manufacturers' power plants with a view to reducing the consumption of fuel to the minimum.

Joseph Kelley, of Calais, has the contract for installing a steam heating plant in the B. & R. Bakery in that city.

John B. McMahon, of 90 College Street, Lewiston, has a contract for installing plumbing and steam heating in a business and residence building on Lisbon Street, for D. J. McGillicuddy.

Massachusetts

Boston and Vicinity.

The final report on the Fourth Liberty Loan in Boston showed subscriptions of $121,700 made through the Master Plumbers' Trade Committee, of which E. W. Cox was president. This amount was taken by 564 individual subscribers, of whom 79 were members of the Master Plumbers' Association. Many of the others were employes, for whom the master plumbers arranged to obtain the bonds and pay weekly. In the Third Loan the Master Plumbers' Committee reported $60,000 in subscriptions.

The new Massachusetts Sanitary Club, the membership of which is made up of both master plumbers and jobbers in plumbing supplies, will meet on Tuesday evening, November 12th, at the Boston City Club. Daniel F. Carroll, of Lowell, president of the State Association of Master Plumbers, is president of the club.

The regular meeting of the Master Plumbers' Association of Boston and Vicinity was held at the association rooms at 53 State Street, on Tuesday evening, October 22nd. It was the first meeting for a month, due to the influenza epidemic, and many important matters were up for discussion. State President Carroll was the guest of the evening and spoke on the matter of uniform plumb-

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RELIABLE Heating Specialties

Can readily be applied to steam heating plants of any kind or size, **new or old,** and, by making them fully efficient, saves 25 to 40% of the fuel.

We also manufacture the American System of Temperature Regulation, the Van Auken Vacuum System, the Thermograde Modulation System, High Pressure Specialties, etc.

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Heating Systems

Show your customers how you can convert their coal-burning systems into combination coal and gas plants, at little expense, by installing

The FRANKLIN

Quick Removable

GAS SYSTEM

Can be changed from gas to coal in a minute's time without tools.

The FRANKLIN burns less gas and gives more heat.

A source of good profit for you. Now is the time to get busy with the FRANKLIN.

Write today for more details.

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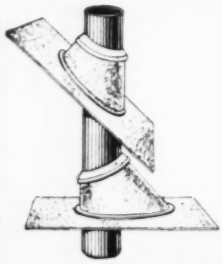
CINCINNATI, OHIO

UNITED LEAD TIN BRASS **LINED PIPE**

Longest-lived, most economical pipe made. Also "United" acid-proof pipe and fittings.

UNITED LINED TUBE & VALVE CO.
186 Franklin Street BOSTON, MASS.

Simplex Adjustable Roof Flashings



Made of Lead, Copper or Galvanized Iron.

Easily applied—Leak proof—Rustless.

Install Simplex for Service and Satisfaction.

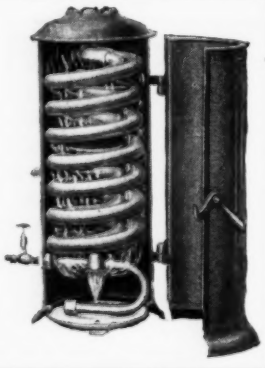
Your jobber has them.

SIMPLEX MFG. COMPANY
313 So. Clinton Street, Chicago, Ill.

SANDS Kerosene HEATER

Heats 30 Gallons Hot Water in One Hour

240 gallons hot water on one gallon kerosene.
HALF CENT A BATH.
Easily converted into gas water heater.



THE AUGMORE MFG. CO.
3419 Sweeney Ave., Cleveland, Ohio
Makers of the famous Augmore & Sands Heaters

Use Only the
ORIGINAL
Double Drainage Drains

The Standard of America

Look for "JOSAM" on Every Drain

Made by
JOSAM MFG. CO.
3063-3067 E. 61st St., Cleveland, O.
EASTERN BRANCH: 7 W. 45th St., NEW YORK
Pacific Coast Branch:
1002-4 Merchants Nat. Bank Bldg., San Francisco, Cal.

ing regulations for the state, a matter upon which the state organization has been working for some time. The association adopted a resolution of the joint conference board, that in cases where shops have lost all their apprentices on account of the war they should be allowed one apprentice. It also was voted to add New Year's day to the list of holidays for which extra time is paid. Secretary VanAmringe reported an interesting ruling by the Collector of Internal Revenue. The Collector ruled that charges for delivery when billed against a customer as a separate item constituted income and as such was taxable. Resolutions were adopted on the death of DeLoris W. Nichols, of the firm of Nichols & Young, of the Dorcester district, who died October 20th. Mr. Nichols had been in the plumbing business in Boston for many years and had long been an association member.

Smith & Pass, of 49 North Russell Street, Boston, have the contract for the plumbing in a large public garage being erected in the Allston district in Boston, for William London. The completed building is to cost $50,000.

The Scofield Campbell Co., of 180 Milk Street, Boston, has the contract for the sprinkler system and the heating in an addition to the plant of the LaPoint Machine Tool Co. at Hudson.

The foundation has been put in for a large addition to the American Woolen Co.'s Washington mill at Lawrence, and the contracts for heating and plumbing have been let to the Bride, Grimes & Co., a local concern. The addition is to cost $700,000 and will be used mainly for the storage of wool.

The John F. Johnston Co., of Fall River, has the contract for installing a steam heating system in a new church structure at Bristol, R. I., for the parish of Our Lady of Mt. Carmel.

Minnesota

Minneapolis and Vicinity.

Fred Sherenbeck, at one time employed by P. J. Gallagher, the plumbing contractor at Faribault, Minn., and since that time employed by Chas. Wilkins & Co., of Minneapolis, as estimator and superintendent, is now with the sales department of the Central Supply Co., of this city.

Bjorkman Bros. are among the busiest plumbing and heating concerns in Minneapolis. They are now completing contracts in several of the city schools, have just finished the exposition contract for the University of Minnesota, and have a very fine plumbing and heating contract for St. Olaf's College at Northfield, Minn.

The remodeling of the second floor of the New York Life Building makes it necessary to do a great deal of plumbing and heating work, and this contract is being taken care of by O. F. Kohl & Co., of 808 Marquette Avenue. O. F. Kohl has been on the sick list the greater part of the summer but is now back on the job. Fred Steller is the "and Co." of this concern and is one of the recognized authorities in plumbing and heating matters in this section of the country.

O. P. Bahneman, of 1314 Marquette Avenue, is completing several contracts for the Pure Oil Co., of this city, in various filling stations which they are erecting. He also has the plumbing contract for a four-apartment building at 2100 Twenty-fifth Avenue South.

The Government has awarded additional contracts in connection with the plumbing and heating of the Over-

land group of buildings to Frank Eha, of 711 Merchants Bank Building, St. Paul, and the Belden, Porter, Gray Co., of Minneapolis.

M. J. O'Neil, of St. Paul, has been awarded the contracts for the plumbing and heating in the additional buildings being erected at the State Sanatorium at Walker, Minn., by the State Board of Control.

The William Hood Dunwoody Industrial Institute is erecting a group of buildings to house 1,200 army and navy men, who are being trained in the school. The buildings are of the usual army barracks type. One hundred closet combinations, the necessary lavatories, urinals, showers, hot water tanks, and hot water heaters will be installed by the Belden, Porter, Gray Co., of this city, and the heating equipment, which will be supplied with steam generated in the present Dunwoody plant, will be installed by the Hankee Heating Co., also of this city.

Ohio

Cleveland and Vicinity.

The Windermere Plumbing Co., of 14208 Euclid Avenue, East, Cleveland, reports having had an exceptionally busy summer remodeling plumbing systems in many residences in its vicinity. The company maintains an attractive showroom.

Part of the Showroom of the Windermere Plumbing Co., 14208 Euclid Avenue, East, Cleveland, O.

Georgia

Atlanta and Vicinity.

Captain Benham Lumpkin, of Atlanta, formerly southern manager for the John Douglas Co., of Cincinnati, O., returned to Atlanta last week after a year's service on the western front in France. Captain Lumpkin wears two gold service stripes on his sleeve and two service ribbons on the breast of his tunic. His is the distinction of having served with the First Division of the American Expeditionary Forces, which was the first unit to take over a front line sector and participate in an offensive against the Boche at the time the Germans were making their terrific smash toward Paris in the spring of the present year. Receiving his commission at the first officers' training camp at Fort McPherson, Captain Lumpkin was immediately sent to France and after a period of training, was attached to the staff of General Bullard, then commanding the First Division, but now commander of the

VICTOR

Double Drainage Shower Traps and Drains

Feature No. 9

Victor traps are designed so compactly as to avoid cutting away construction work to install them.

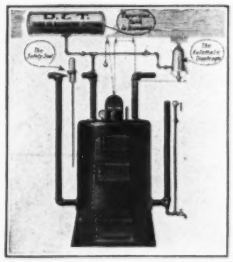
If your Jobber does not carry Victor Traps, mail your order to us.

The Victor Brass Mfg. Co.
CLEVELAND OHIO

Licensed under Patent No. 855017

D & T Tank-in-Basement System

Saves 25% on Coal Bills



It is the most economical and efficient method of Hot Water Heating known. It will save your client money on the purchase of equipment, the installation and up-keep.

Over 35,000 D. & T. systems now in use.

Write for Booklet "Progress in Hot Water Heating."

D & T Manufacturing Co.
1907-09 Pine Street
St. Louis, Mo.

The demand for our Ingot Metal has made H.I.M. grow.

The largest Brass Goods Manufacturers in the middle west are using exclusively our **Red and Yellow Ingot Metal.**

Brass Founders using **H. I. M.** Ingot Metal are paying no attention to the high price of Copper and Spelter.

If you neglected to buy H. I. M. write for particulars.

HARTMAN INGOT METAL CO.
2511 West 21st Street
CHICAGO, ILL.

Full Value from Every Pound of Steam

With this **Nicholson Expansion Steam Trap**, there can be no flooded, cold radiators. The quick expanding center tube makes valve action positive. It allows waste to pass through, but shuts tight when live steam comes along.

The trap can be installed in any position; no levers, no floats or bearings. Nothing to get out of order.

Write for complete information.

W. H. NICHOLSON & CO.
112 Oregon St. Wilkes Barre, Pa.

SAVE COAL
By Heat Control

This is exactly what every home owner has got to do if he expects to get through the winter months on the reduced coal ration.

This saving can be accomplished and in its fullest measure if the heating plant is equipped with

The "MINNEAPOLIS" HEAT REGULATOR

"The Heart of the Heating Plant"

Entirely eliminates fuel waste by automatically operating the drafts, thereby maintaining an exact, even temperature throughout the day and likewise a definite lower temperature for the night.

An article of extremely satisfactory service—time tested, absolutely reliable and widely advertised.

Offers live dealers a splendid opportunity for many sales with generous profit.

Write our Sales Department.

Minneapolis Heat Regulator Co.

General Office and Factory

Minneapolis Minnesota

Gauge Glass
Immediate Delivery
Standard and High Pressure

Developed by American ingenuity and made in our own country.

Our High Pressure glasses have fused ends and are annealed by special process. Try them for highest steam pressures.

And Remember we can deliver immediately in any quantities, any diameter, any length.

Write for full information

Magee Steam Specialty Corporation

136 and 138 Beekman Street New York City

First Field Army. After serving as liaison officer on the staff of General Blondat, of the French Army, he was placed in command of a machine gun platoon attached to the First Division, and when that organization went into the line at Soissons on July 18th to participate in the grand smash at the Rheims-Soissons salient, Captain Lumpkin was on deck.

"We had been up at Montdidier in some pretty stiff fighting and then were sent by a roundabout way down to a point near Soissons and located between a veteran French division and a division of Moroccans, some of the fiercest fighters of the allied armies," said Captain Lumpkin last week in an interview in "The Atlanta Journal."

"The Boche was making his big push toward Paris, and it was up to these three divisions to break in the flank and relieve the tremendous pressure on the point of the salient. Well, we went over the top on July 18th, and it was the bloodiest scrap a man ever jumped into. The Moroccans, once they got into the Boche, threw away their rifles and drew their long curved knives that they always carry. The way they went into those Germans was something to look at, and the throat-cutting campaign they launched made the Boche sick. Our boys, when they saw how well the Moroccans were making out, followed suit and used their trench weapons to the exclusion of their rifles and bayonets. They punished the Boche terribly, and those that were not captured are running yet.

"We took 5,000 prisoners and started the movement that pinched off the Rheims-Soissons salient. The French commanders gave the First Division credit for saving Paris with that smash, and let me tell you that the First has lived up to the reputation it established in that first drive.

"Just before we went into that scrap I got orders to take my machine gun platoon and report to Major Theodore Roosevelt, Jr., whose command was supposed to be close by. We loaded up in five big trucks and started out, but got out into No Man's Land. After riding around for a while and finding nothing we turned around and got back without being fired on. The next day one of my corporals, who could speak German, was talking with some German prisoners we had taken the day previous, and they asked him where the big tanks were that came out into No Man's Land the day before. They were much surprised to learn that the 'tanks' were army trucks and told us that the Boche artillery was preparing to open up on the supposed 'tanks,' when we got back out of sight.

"The First Division was sent down to the St. Mihiel sector just before I left to come back to the States, and when I was in midocean we got a wireless saying that the old organization, with the Eighty-second had helped wipe out that section of the line."

Captain Lumpkin has many souvenirs from the trenches, among them being a shoulder strap from the uniform of a Prussian guard captured in the Soissons offensive.

After spending a few days in Atlanta and at his home in Cartersville, where his parents reside. Captain Lumpkin will report at Camp Sheridan, Ala., to be assigned to the Ninth Division. Several other officers who have seen active service in France are also to be assigned to this division.

J. E. Stephenson has sold his plumbing business in Atlanta and gone to Charleston, S. C., to help in licking the kaiser by working with the tools in the building of the North Terminals.

J. B. Bowen, of Atlanta, has moved his plumbing business from 3 Peters Street to 154 Whitehall Street.

California

San Francisco and Vicinity.

San Francisco is now in the grip of the Spanish influenza; and, though the plague appears not to be taking hold in San Francisco or other California and Pacific Coast points with anything like the violence manifested by it in regions further east, it has, nevertheless, replaced in public interest every other consideration, except the war and the peace which is talked of. The authorities tell us that the epidemic is now probably at its height, and that, after a few days of comparative severity, we may expect a gradual decline in the violence and prevalence of the disease. Most of the offices of the plumbing, heating and ventilating companies have donned masks and are submitting, with more or less reluctance, to the rules prescribed by those who are supposed to know.

The Fourth Liberty Loan Campaign is now a thing of the past, and, as was to be expected, the plumbing and heating contractors did their share. While no total for the trade has been figured up, practically all the establishments in San Francisco and vicinity report a one hundred per cent subscription. Next will come the campaign for the Red Cross and other associations organized for war work. Doubtless the trade will, as usual, come through with liberal donations for these. Members of the trade are beginning to look for the time when the Prussian front finally and completely caves in.

So far, San Francisco proper has been hit more than benefited by the war restrictions on buildings, though the steady increase in the aggregate quantity of necessary building has done much to offset the work held up till after the close of the war. A good many San Francisco concerns are now turning their attention to the suburban cities and towns on the east side of San Francisco Bay, where the necessary war work far exceeds the loss by the holding up of non-essential work. While a comparatively small part of this war building calls for expensive plumbing, the total amount of work called for is very large.

Alterations to a frame residence in Castenado Street will be done by J. S. Malloch, 110 Jessie Street. The entire cost, including the plumbing, will amount to $2,250.

Bids are being received at the office of the Depot Quartermaster at Fort Mason, San Francisco, for plumbing supplies, including faucets, valves, flanges, plugs, tubing, and piping.

J. C. Hurley, of 509 Sixth Street, has obtained the contract for the ventilating work on the Coalinga Union High School. The amount of the contract is $17,898.

Los Angeles and Vicinity.

A new method of procedure to relieve the housing situation for war industries in the harbor district was inaugurated this week, following a visit to Los Angeles of Mark C. Cohn, Pacific Coast field agent of the Bureau of Industrial Housing and Transportation of the Department of Labor. As a result of conferences attended by representatives of the Chambers of Commerce of San Pedro, Wilmington, Long Beach and Los Angeles, and the Priorities Committee of the Los Angeles County Council of Defense, a United States Home Registration Committee was appointed to take charge of the housing problem. The first step will be to take a survey of the harbor districts at San Pedro, Wilmington and Long Beach and ascertain the number of vacant houses and number of unused rooms in private houses available to war workers. If this canvass shows a need for the erec-

BUSINESS THOUGHTS

No. 10

A man buys a thing, pays the price, and promptly forgets that price—there is nothing to **remind** him of it.

This man **installs** the thing, or has it installed, and **uses** it—in use it is constantly reminding him of its goodness or badness—of its poor or good quality.

He has perhaps forgotten **the price**—but has he forgotten **you**—the man that sold him? Perhaps he passes your shop every day and the inferior operation of the inferior article prompts him to remember that you "stuck" him.

It's a bad thought, isn't it?—mind you he has forgotten that he bought a **cheap thing**—he has forgotten the price, but the quality reminds him every day, to your hurt.

Ethics aside, isn't it playing safe to

"Keep Up the Quality."

Our business magazine "Better Business" is mailed without charge or obligation to plumbers. It preaches a business creed that has demonstrated the right kind of good will and profits. May we send it to you?

WOODWARD-WANGER CO.

"Keep Up the Quality" PHILADELPHIA, PA.

BRINGING

ARMSTRONG TOOLS

TO YOU

THIS Pipe Cutter is not only the strongest and most rapid working, but it is the cheapest, by reason of its taking a larger range of pipe than any pipe cutter known.

CATALOG SENT UPON REQUEST

Model A Quick Acting

THE ARMSTRONG MFG. CO.

284 Knowlton Street Bridgeport, Conn.

WOLVERINE
Sectional Floor and Ceiling Plates
Flat Pattern

Sizes
3/8" to 2"

Steel
Nickeled

Wolverine Brass Works
MANUFACTURERS
Grand Rapids, Mich. San Francisco, Calif.

The AMERICAN Bent Tube Sink Trap

Fig. 2386

WITH CAST FEMALE IRON PIPE OUTLET

This trap can be furnished in either 1¼ inch or 1½ inch size.

Ask Your Jobber

AMERICAN SANITARY MFG. CO.
ABINGDON, ILL.
Manufacturers of
FINE N. P. BRASS SPECIALTIES

HAYNES SELLING COMPANY

Heating Specialists

Modulated and Vacuum Heating Systems Adapted for all Types of Buildings

Over 25 Years' Experience

1711 Sansom Street Philadelphia, Pa.

No. 765. Soap Dish. Diameter of Bracket, 2½". Height, 4¾".

Learn to Say
"American Beauty"
when ordering Bath Room Fixtures.

Made of China. Pure white, sanitary and durable.

New in design and principle of construction.

No screws show on face of post brackets. Cannot tip over

Bay Ridge Specialty Co., Inc.
Trenton, N. J.
We are the Originators of this Style of Fixtures

tion of more houses in these districts, the approximate number needed will be determined and authority will be granted by the Bureau of Industrial Housing of the Department of Labor for their erection.

Architect Homer W. Glidden and Civil Engineer Arthur Veith, of Los Angeles, have received notice of the acceptance of their application for a commission in the United States Field Artillery and have been ordered to report to the officers' training school at Camp Taylor, Ky.

Major J. A. Manning, formerly structural engineer in the Los Angeles City Building Inspector's office, who has been seriously ill for several months in the hospital at Camp Dodge, Iowa, has sufficiently recovered to travel and has arrived at his home in Los Angeles on a furlough. His leave of absence extends to January 1, 1919.

The Thomas Haverty Co., 517 South Los Angeles Street, has been awarded the contract, at $2,670, for the installation of a low-pressure steam heating plant in the infirmary building in course of construction at the Sylmar Sanitarium.

H. G. Gary, of 1253 South Figueroa Street, has been awarded the contract to install the plumbing and gas fitting in a frame hospital building being erected by the Havard Military School, at Sixteenth Street and Western Avenue.

W. W. Brooks has been awarded the contract for the plumbing in the new $43,798 school building to be erected on Soto Street, if a federal permit is granted.

John Hokom, 4321 Moneta Avenue, is busy with government work, having the plumbing work on a number of barracks, such as the one at Exposition Park and the one at the Dental College and the Radio Station at San Diego.

Other Cities in the State.

Bids were received on the contracts for the Lottie Grunsky School in Stockton this week. The Miller-Hays Co., of that city, was the low bidder for the plumbing, its bid on the first proposition being $2,650, and on the second, $2,500. The same concern submitted the lowest figures on the heating and ventilating work, the first, $10,575, and the second, $10,000.

The plumbing contract for barracks, which have been altered for the Polytechnic College of Engineering, in Oakland, was awarded to Carl T. Doell. The contract amounts to $10,000.

G. H. Grunwald has purchased the plumbing business of A. Mathes in Placentia.

The Government expects to spend in the neighborhood of $500,000 for the construction of bungalows at Hercules for the convenience of the employes in the power works there and their families. This will meet an urgent need of the thousands of additional workmen now employed on Government contracts. The powder plant at Giant is being enlarged, and it is likely that the same course will be pursued there.

An election was held in Modesto this week, at which the voters were asked to authorize the issuance of $80,000 in bonds for municipal improvements, $30,000 is needed for the water system, $10,000 for sanitary sewers, and $12,000 for a street sprinkling system.

The plumbers' examining board of Los Angeles is canvassing the city and county to ascertain the number of plumbers who have neglected to register in compliance with the state law. There have been nine hundred registrations already, and 721 of this number have been examined. The board will arrange for a further examination, and all plumbers, who do not hold permits, are asked to apply for them to Charles M. Swinnerton, immediately. Imprisonment for not

longer than six months or a fine not to exceed $500, or both fine and imprisonment, will be the penalty for failing to register within a reasonably limited time.

Iowa

The Ryan Plumbing & Heating Co., of 403 Brady Street, Davenport, has been awarded the contract for the installation of plumbing and heating systems in a new monastery building for the Carmelite Sisters at Bettendorf, Iowa.

E. L. Rodgers & Son, of Cedar Rapids, have been awarded the contract for the installation of modern plumbing in F. L. Buser's new residence.

New York

New York City and Vicinity.

Final complete reports from Brooklyn show that the Master Plumbers' Association of that borough rolled up a grand total in Liberty Loan subscriptions amounting to $299,850, over half the grand quota assigned to the five boroughs combined, and forty-seven thousand dollars over its total for the third loan. The association was to have had a grand rally to celebrate the occasion on Friday night, October 25th, but due to the sudden death of their close associate and member, D. J. Donovan, which occurred that day, the meeting took a hurried adjournment, and further business was deferred till a later date.

Mat. J. Kennedy, of the Brooklyn Association, the active chairman of Brooklyn's Liberty Loan Committee, has been confined to his home with influenza for several days, but fortunately, at this writing, his condition is improving and it is thought he will soon be fully recovered.

The U. S. Department of Labor has awarded a contract for the construction of thirty-seven three-family houses, to be built at Staten Island, N. Y., to Bing & Bing Construction Co., of New York. The contract is made on the fixed fee basis.

A BATH AND A SHAVE IN AN OLD FRENCH TOWN.

An American Soldier Tells How He Got a Bath and a Shave "Over There."

The letters of our boys "Over There" often bring an impression of conditions, which it is impossible to gain from any other source, intimate pictures of the daily life and hardships of those who are fighting for the world and humanity. Here, for instance, are descriptions of a public bath in a private house, and of a "barber shop" behind the lines, the latter recalling customs more than a century old, which Raymond F. Gier, of Lansing, Mich., wrote to his parents, and which we take from "The Detroit Free Press:"

"We are located in a fine old French town (the censor may cross out the name, but I may be able to let you know later), and are right among typical French people. They have treated us royally, considering the times and conditions. Everywhere we go we are greeted with "Bon jour" and the like, and the people smile at us and many old men even take off their hats to us. The French are fine people, and altho they have some very queer customs, they can't be beaten for genuine hospitality.

"There are so many, many things that I could tell you,

WE BUY
Iron Pipe Couplings
SPOT CASH

How many, either pounds or pieces, have you of various sizes?

GWILLIAM SUPPLY COMPANY
615 Christian Street PHILADELPHIA, PA.

Building Bigger Business
On Sanitary Principles

You Need "SANIDOME" Bibbs Basin and Bath Cocks

The Only Strictly Sanitary Line of Products
Write Us For Information

The Haydenville Company
Haydenville, Mass.

Dole PACKLESS GRADUATED RADIATOR VALVE

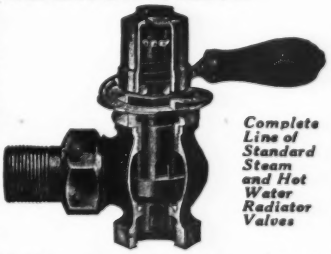
Embodies a new and exclusive DOLE principle by which you can have every degree of opening required in vacuum or vapor steam heating.

This Adjustment is easily made while the steam is on.

Nothing like it on the market.

Furnished with the DOLE without extra cost.

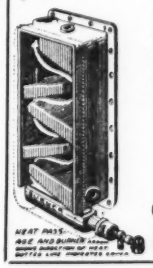
Write for new circulars.



Complete Line of Standard Steam and Hot Water Radiator Valves

THE DOLE VALVE CO. 208 No. Wells St. Chicago

Build Up a Profitable Business
Sell Sharp's Cleanout Water Heater



There is good business in selling the Sharp's Cleanout Water Heater. Its many superior points over the ordinary type of Heater appeal at once to the careful buyer, and sales can be quickly and easily made. The absence of coils, the small amount of fuel needed, its simple cleaning process, are all features which make it a splendid seller.

You can build up a fine business with the Sharp's. Write or wire at once for complete information regarding it.

General Manufacturing Co.
Heater Dept. 67 19th St., Wheeling, W. Va.

Robert W. Hunt & Company's Report on Sodering Fluxes

All leading brands of sodering fluxes, including muriatic acid, were tested, in comparison with Allen fluxes, by Robert W. Hunt & Co., Testing Engineers, Chicago. Allen Fluxes made joints that yielded at 15,224, 16,278 and 18,962 pounds per inch, while muriatic tested only 6,036 pounds and various compounds at from 7,182 to 14,702 pounds. **L. B. ALLEN CO., INC.**, 4526 **North Lincoln Street, Chicago,** will send samples free.

The Hotstream WATER HEATER

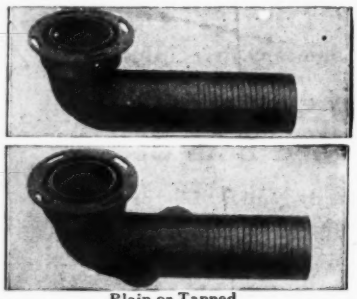
Kerosene Water Heater

Here is a REAL Kerosene heater. Heats as HOT and FAST as a gas heater. Patented wickless burner generates its own gas, and throws a clean, powerful, odorless flame. Will run over 12 hours on a gallon. Send for catalog and folder.

THE HOTSTREAM HEATER CO., 1375 E. 17th St., Cleveland, O.

"Makers of Heaters That Heat" Noiseless blue flame—like gas.

Adjustable Iron Closet Bends



Plain or Tapped
4 in. Dia. 12-15-18 in. long.

They cost no more than the ordinary kind and the constantly increasing demand attest their superiority.

Made of best grade soft gray iron.

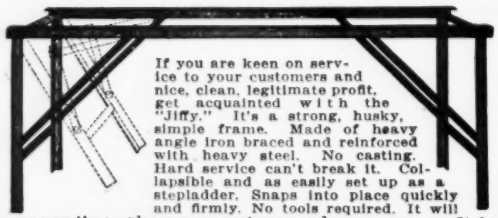
Prompt deliveries.

Wolverine Foundry Co.
DETROIT, MICH.

Manufacturers of
Boiler Stands, Vent Caps, Cesspools, Sink Brackets, Laundry Tub Legs, etc.

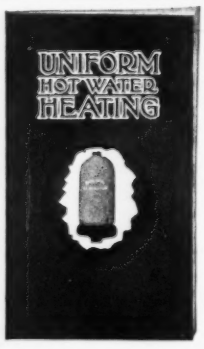
"JIFFY"

Collapsible Laundry Tray Frame



If you are keen on service to your customers and nice, clean, legitimate profit, get acquainted with the "Jiffy." It's a strong, husky, simple frame. Made of heavy angle iron braced and reinforced with heavy steel. No casting. Hard service can't break it. Collapsible and as easily set up as a stepladder. Snaps into place quickly and firmly. No tools required. It will save you time—please your customer and mean more profit for you. Ask your jobber.

THE FORD DONLEY CO., 1940 East 117th St., Cleveland, Ohio



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It tells you all about the

Ball Seal Generator

for Hot Water Heating.

This generator increases circulation and radiation. Prevents sluggish, water-logged conditions. Reduces fuel cost. Operates without noise. No attention needed.

Just what you want for that next job.

The Ball Seal Generator Co.
Easton, Pa.

but I will have to let some of them go until I get home, when I can tell them with the aid of my diary, which I am trying to keep pretty complete.

"We have no hot water here, or didn't have till yesterday, so I went down-town, just a few blocks, and got a bath day before yesterday. I went into a little shop to buy a larger diary, and after buying it I asked the proprietor, with the aid of my little book, where I could go and get a bath. I guess very few people in this country have bathrooms in their houses, so there are many public baths in the cities. The storekeeper immediately put on his hat and coat and told me to follow him and he led the way three or four blocks down the street to a bathhouse (I guess you call it that). That just shows how hospitable the French are to us.

"We walked in and he told the lady that I wanted to take a bath, then he left us. The lady motioned me to a chair, and while I sat down she went to fix the bath. She came back soon and showed me to one of the rooms. The room was small, but in it were a very large bathtub and two chairs. On one of the chairs were two bath towels. The tub was lined with a sterilized white sheet and half filled with very hot water, which came clear up to my shoulders, the tub being much deeper than ours. I had a fine scrub and it only cost me one franc seventy-five centimes, amounting to 35 cents in our money.

"One of the strangest things to me are the barber shops. I went in one day to get a shave—and I got it. The chairs are ordinary chairs, and in the shop where I went there were only three. They are in front of a large dressing-table with a bowl in the middle of the top. You sit down in the chair with your feet on the floor and rest your head on the back part of the chair. I can't understand why they have it arranged that way, as it is uncomfortable for both the customer and the barber—and the latter has to bend way over to work.

"First, that barber lathered my face and shaved me down, then he lathered again and shaved up. After he was through shaving I had to get up and wash the soap off myself (I only knew what to do by looking around and seeing men in the other chairs do it), and after I had done that I sat down again, and he dried it and sprayed my whole head with a very strong scented toilet water, nearly drowning me. Then he dried me and put powder on with a large powder puff. It cost fifty centimes (10 cents), and altho very cheap I'll not go to a barber shop very often to get shaved. It is such things as this that make you think you are in a foreign country, sure enough."

Major Tactics.

Crown Prince—"Have you caused my proclamation announcing that this offensive will bring our victorious arms to Paris and the Channel ports to be read to all regiments?"

Aid—"Yes, Excellenz."

"Then order out my car, and drive to our new headquarters, thirty kilometers to the rear."—Life.

Unmasked at Last.

"Don't talk to me about Methuselah," exclaimed the army man.

"I never heard anything against him."

"Well, I have my suspicions that he reported his age as high as possible to make sure of being beyond the draft limit."—Washington Star.

Buy War Savings Stamps.

The DAY BOOK *of the* BON TON DE LUX PLUMBING & HEATING CO.

Jerry Dolan's Record of the Interesting Happenings of the Day

(Continued from Page 129 in the October 29th Issue.)

October 27, 1918.

The office girl left us yesterday and so me and Hank are going to get along alone for awhile. She got a job making shells for delivery to the Huns; is going to wear overalls, and make as much money as a fitter's helper right off the bat.

October 28, 1918.

That extra hour of sleep that we got this morning sure felt fine. It was all right to get up with the sun in the summer time, but we might as well be somewhat consistent and do the same thing in the winter, instead of rolling out by moon light and going to work in the dark.

October 29, 1918.

We're running along pretty short-handed right now. Just me and Hank and a couple of plumbers and a boy, and the boy is leaving us next week. He's signed up with the Navy and is going over to the Dunwoody to take up sheet metal work.

October 30, 1918.

Last week Hank went over and fixed up a broken supply pipe on a high-tank closet combination. The old one was of brass nickel plated and had split in the seam, so Hank made one out of galvanized iron and then painted it with aluminum bronze. This morning, the owner called up and made an awful holler. He claimed that there was something leaking or broken in the tank and that it must be our fault, because we had been working on the tank just a few days before. Hank was away on another job, and so I ran over to see what was needed and found that the cross bar on top of the tank had worked loose and put the flush valve out of commission. A few longer screws made it as good as new. As luck would have it, the owner wasn't there, and so I didn't get a chance to show him that it was no fault of ours that the tank was leaking. It's a fact, tho, that, if a plumber ever goes on a job, and then something happens to the plumbing or heating or gaspiping within the next six months, it's certain the owner will say that the plumber was the cause of it.

October 31, 1918.

I was over on the other side of town the other day making a range connection for a friend of mine, and I had to cut and thread a couple of pieces of pipe, and so I dropped into a shop that was close by, and the two members of the firm were in, and while I was cutting the pipe a fellow came in and wanted to buy a ¾-inch galvanized street ell, and so one of the firm got it and handed it to this customer, and the customer asked the price and this fellow says 10 cents, and so the customer paid him the dime and went out. When I got ready to leave, I slipped them each a cigar and they was good cigars, too, because they cost six cents apiece now, and a fellow has to buy them because in the first place the salesmen haven't any expense accounts any more, and in the second place they don't come around anyhow, and then I asked them if they had very many of those street ells to sell for a dime each, but one of them smelled a rat, and so he pulled a Yankee trick by asking another question instead of answering mine. He wanted to know

Plumbers Specialties
Brass Goods for the Plumbing Trade
Closet Tank and Seat Trimmings, Connected Waste and Overflows, Traps, Supply Pipes, etc.
Any Reliable Jobber can furnish the "Femco" Line from stock
Frost Manufacturing Co., Kenosha, Wis.

ODORLESS
TOILET ROOMS ASSURED
No Chemicals. Every owner of a water closet a prospective purchaser. Write for particulars.
SANITARY APPLIANCE CO., Mfrs.
NEENAH, WIS.

Makes No Noise

A Quiet Pump in Your Home
You can keep Pump noise out of your home by keeping out the kind of a Pump that makes a noise.
The Geo. J. Roberts Co.
Dayton, Ohio, U. S. A.

PORTABLE SHOWERS
SPECIAL PRICES IN DOZEN LOTS
SHOWERS OF ALL DESCRIPTIONS
GOETZ BRASS COMPANY
630 N. FRANKLIN ST. CHICAGO, ILLINOIS

ELECTRIC HOUSE PUMPS · Dayton · WATER SUPPLY SYSTEMS
Suction Pumps *and* Complete Water Supply Systems
pumping capacities 120 to 1,000 gallons per hour. Efficient Deep Well Pumps with Hyatt Roller Bearings and silent chain drive, pumping capacities 150 to 2,000 gallons per hour. Write for bulletins and price sheets.
The Dayton Pump & Manufacturing Co.
DAYTON, OHIO New York, N. Y., 30 E. 42d St.

No. 2A Thermostat
MFG. CO. ROBERTSHAW YOUNGWOOD, PA.
The standard for 30-40 gal. boilers, and single coil heaters or equivalent. Has ⅜-in. gas openings.
We Make All Sizes

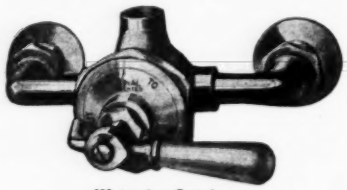
UNCLE SAM has tested our
STANDARD PORTABLE VISE BENCH AND PIPE BENDER
and same has proved satisfactory. HE is now one of the THOUSANDS of satisfied users we have. Drop us a line and we will send you full particulars, or ask your jobber for same.
STANDARD IRON WORKS
508-10 E. 74th Street, New York City

¶If you want a salesman, foreman or workman, advertise in the Classified Department of "*Domestic Engineering.*" Used by the best houses in the trade.

ROYAL

Mixing Valve for Showers

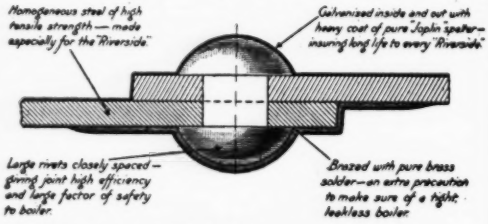
Simple in Operation—Few Working Parts.



Write for Catalogue.

THE ROYAL BRASS MFG. CO. CLEVELAND, OHIO

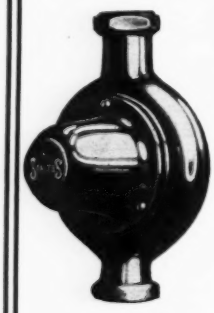
The "Riverside" Riveted and Brazed Seam


Homogeneous steel of high tensile strength — made especially for the "Riverside"
Galvanized inside and out with heavy coat of pure Joplin spelter — insuring long life to every "Riverside"
Large rivets closely spaced — giving joint high efficiency and large factor of safety to boiler.
Brazed with pure brass solder — an extra precaution to make sure of a tight, leakless boiler.

The Strongest and Tightest Seam on any Range Boiler

Riverside Boiler Works, Inc.

Cambridgeport, Mass.



Government Type Non-Siphoning Trap

Made by

Sanitas Manufacturing Co.

105 Washington Street

Boston, Massachusetts

Prices on Application

Tank Fittings of Quality

1856 **"McSHANE"** 1918

The ORIGINAL Compound Lever Ball Cock, Elevated, Low-Down, Top and Bottom Supply. Tank Levers and Valves.

McSHANE BELL FOUNDRY CO.

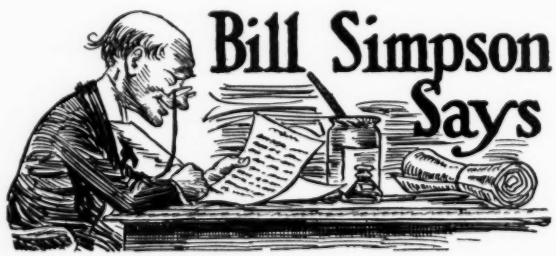
BALTIMORE, MARYLAND

what we charged for them down at the Bon Ton De Lux Plumbing and Heating Co. We have been doing these range connections C. O. D., and so me and Hank each had a little book with the selling prices of pipe and fittings and things like that filled in right up to date, and so I pulled it out and looked up the street ells and told them that our price was 30 cents each. They both told me that a fellow that would charge that much for a little fitting like that was a thief or a robber, and so we got out a catalog and looked up those fittings. The list price is 28 cents. Buying by the piece, the discount is 30 per cent, that means that each of them costs in round figures 20 cents. A mark-up of 50 per cent is little enough on items of that size, and that brings the selling price up to 30 cents. Well, that looked all right, but one of the fellows said that they bought all of their fittings by the pound and he knew that they were cheaper that way. Well, what if they are? The customer is not buying pounds of fittings, he is buying single fittings, and when the plumber buys them by the piece he has to pay the piece price for them, and it's right for him to charge the piece price when he sells them. I had to beat it for the job, but I'll bet those fellows do a little studying.

November 1, 1918.

Old Man Flannigan grabbed some Government work, and the men in his shop are working 12 hours a day and making so much money that they get round shouldered carrying it home. I see where me and Hank will have to get back on the pay roll, unless things pick up around here.

(To be Continued.)



(With Apologies to K. C. B.)

I've been buying apples
* * *
From old "Farmer" Jones
* * *
Every fall for a good many years.
* * *
I knew his three sons
* * *
Had all enlisted
* * *
And only he and his wife
* * *
And his daughter were
* * *
Left at home.
* * *
So, when I headed my auto
* * *
Toward "Farmer" Jones this year,
* * *
I said to myself:
* * *
"I suppose Jones will
* * *
Be up against it for help
* * *
And will probably have quite
* * *
A complaint to make about his
* * *
Boys who have gone away."

But, by gosh, to my surprise
* * *
I found that Jones had bought
* * *
A caterpillar tractor, and
* * *
He took me out in the field
* * *
And showed me his 19-year-old
* * *
Daughter (dressed in a khaki suit)
* * *
Doing the fall plowing
* * *
And enjoying it, too.
* * *
Jones says, his sons write him
* * *
And say that they will be glad
* * *
To get back to the farm,—now
* * *
That the modern tractor
* * *
Is part of the farm equipment.
* * *
Whether you are a farmer
* * *
Or a plumber or a banker,
* * *
You will find that
* * *
Modern equipment will
* * *
Enable you to do *more* work,
* * *
Do it *easier* and to keep
* * *
A Better Class of Employes.—
* * *
High-class, self-respecting
* * *
Workmen will not tolerate
* * *
Old, man-wrecking equipment.—
* * *
Is your equipment good enough
* * *
To attract the best workmen?

GERMANS STILL STRIPPING HOMES OF METALS.

Confiscation of household metal utensils and fixtures is still going on in all parts of Germany despite the constant protests of housewives and house owners. The metal collecting branch of the German War Office complains that the public underrates the importance of the metals for prosecuting the war. It points out that the public monuments which are being melted down will yield only small quantities of bronze and copper.

Historical guns and other weapons in the armories will be scrapped unless they are of exceptional interest, and the Berlin Armory has already given up several guns. Copper coins from collections will not be commandeered owing to the small weight of metal they would yield, and their great historical value.

The Royal households are not to be exempted from the confiscation orders. The public buildings in Berlin which have already been stripped of their copper roofs include the Kaiser-Wilhelm Academy, the Royal New Library, the Old Museum, the Brandenburg Gate, the Admiralty, Prince Albrecht's Palace, the Customs Office, several churches, synagogues, hotels and hospitals and the department stores of Wertheim and Tietz.

Rensselaer, N. Y.—Raymond G. Ross, a contracting plumber of this city, has filed a voluntary petition in bankruptcy scheduling liabilities of $1,367.

"Reading" Specialties
Hot Water - Steam Vapor and Vacuum Heating
Embody Advanced Ideas
The Reading Heater & Supply Co., Inc.
Reading, Pa.

Free for the Asking
This Catalog contains interesting details on
"Reading" Heating Specialties
Gives you the information you want regarding the "Reading" Tank-in-Basement System, modern installation methods, fuel saving, uniform heat, etc.
Send for your copy today.
The Reading Heater & Supply Co., Inc.,
Reading, Pa.

Eagle All Lead Roof Flange

LEAD PIPE
Length, 6 inches
Diameter, 4½ inches
SIZE OF APRON
15 inches Square
Made in Angles, 45 deg., 22½ deg. and Straight.
No Caulking To Be Done
Joints Lead-burned — No Solder Used
Flexible Adjustable Economical
Write for Circular and Prices.
Manufactured only by
The Eagle-Picher Lead Co.
CINCINNATI, OHIO

Use Products
manufactured by
RAYMOND LEAD WORKS
BRANCH UNITED LEAD CO.
735 South Washtenaw Ave. CHICAGO
If Your JOBBER Cannot Supply You With Our Goods, Send Your Orders To Us Direct

NIEDECKEN MIXER
For Shower Lavatory Bath Sink Etc.

Write for Bulletin D-10-X
HOFFMANN & BILLINGS MFG. CO.
MILWAUKEE

WARCO

Floor and Ceiling Plates

Substantially made of heavy stamped steel. May be cut to fit any conditions. Adjustable. Unbreakable.

Hinge and catch new in construction and invisible when plate is closed.

Nickeled on copper. Highly polished. Sizes, ⅛-in. to 3-in.

Write for prices and details.

W. A. RUSSELL & COMPANY
63 W. 37th St., New York City

It's All in the Burner

No. 92

Perfect combustion, not only means the consuming of every particle of gasoline, but produces a higher degree of heat, greater efficiency and economy. This accounts for the unusual success of the

TRADE
Turner Double Jet Torch
MARK

Only torches with double-jet burners on the market. Adjustment is simple and easily regulated. Made of Turner bronze burner metal. Order the Turner No. 92 Torch from your jobber. It will soon pay for itself in saving of gasoline alone and give years of satisfactory service besides.

Write us for booklet. Dept. D.

The Turner Brass Works Sycamore Illinois

Clean Sweep Traps

The ACME in TRAPDOM.

Nothing better—nothing as good. A SUPERFINE TRAP for homes and offices.

In use by the GOVERNMENT and everybody else that wishes Real Traps on the Job.

Sweet Homes and Offices.

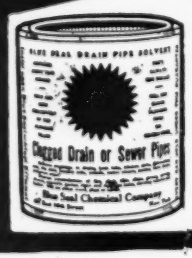
Made in BRASS and LEAD.

Detroit Sanitary Supply Co.
Sole Manufacturers
DETROIT MICHIGAN

TRY BLUE SEAL
AT OUR EXPENSE

This liberal offer is for plumbers who have never used **BLUE SEAL.** It gives an opportunity to try at our expense the original Money Back Drain Pipe Solvent.

Cut out this advertisement, mail it direct to us with your own address—and your jobber's. We will then send you, transportation charges prepaid, six one dollar cans (2 lbs.) **BLUE SEAL**



DRAIN PIPE SOLVENT

Use these six cans according to directions to clear waste and drain pipe stoppages. If the Solvent does all we claim for it you are to send us $3.60 (special price for plumbers) within ninety days. If not the trial costs you nothing.

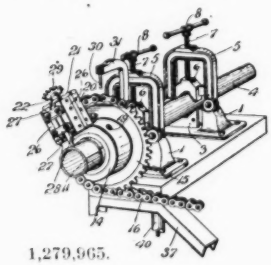
10,000 plumbers now use **Blue Seal.** Over 200 jobbers stock, sell and recommend it. If you haven't used it, this is your opportunity

BLUE SEAL CHEMICAL CO.
417 E. 16th St. New York

Patents

Heating Department.

1,279,965. Pipe Cutting Machine. Amos F. Bacon, Fremont, Mich., assignor to the Fremont Manufacturing Co., Fremont, Mich., a corporation of Michigan. A pipe cutting mechanism comprising an inner sleeve having two sections of different diameters, an outer sleeve located over the section of larger diameter and provided with an annular inwardly extending lip bearing against the end of the sleeve, a collar connected to the opposite end of the outer sleeve and located around the section of smaller diameter on the inner sleeve, said collar bearing against the shoulder between the two sections of the inner sleeve,



1,279,965.

means for driving the outer sleeve and rotating it around the inner sleeve, a cutting tool mounted on the outer sleeve, and means for moving the tool toward or away from the longitudinal axis of said sleeve, substantially as described.

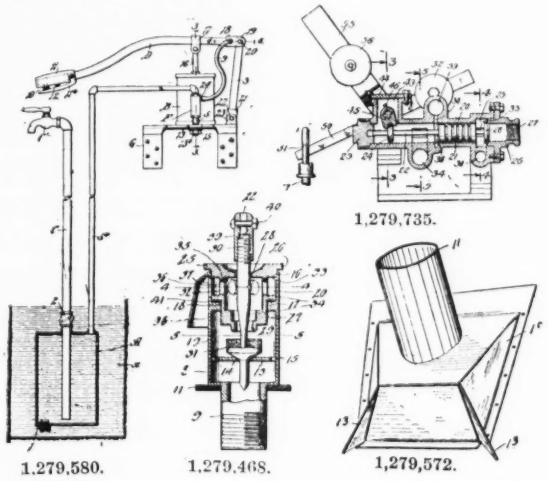
Plumbing Department.

1,279,580. Air Pump for Water Distributing Systems. Theodore Peters, Ferdinand, Ind., assignor to The Pet-Son Pump Co., Ferdinand, Ind., a corporation of Indiana. An air pump, comprising a cylinder provided with a piston, an operating lever for said pump formed from a pipe or piece of tubing, a hollow hand grip on said pipe provided with an air discharge port and a movable portion equipped with a valve that controls said port, and a flexible conduit that establishes communication between said pipe and the means to which the pump supplies air.

1,279,735. Sewage Ejector. William McClintock, New York, N. Y. In a sewage ejector, a pressure control valve having a casing constructed to form a pressure chamber and a closed exhaust chamber, a longitudinally movable piston valve in said casing separating said chambers, a valve seat at one end of the pressure chamber, a puppet valve, a solid reduced connection between the puppet valve and the piston valve, said longitudinally movable valve being arranged to co-operate with said valve seat, a solid rod projecting from the opposite end of said longitudinally movable valve through the exhaust chamber, a collar on said rod, and a rock shaft co-operating with said collar and journaled in said casing and passing through a part thereof which forms the exhaust chamber.

1,279,468. Ball Cock. Forest V. Smith, Lewiston, Me. A device of the class described comprising a casing having a screw threaded extension at one end and its other end open, an annular flange formed on the interior wall of said casing and having its inner periphery screw

threaded, a valve rest carried by said casing adjacent its lower ends, a screw threaded bushing engaging the screw threads in the flange and having a cap closing the open end of the casing, a valve stem passing through said cap and bushing, and said bushing having a valve seat at its lower end, a valve on said stem adapted to rest on said valve rest when in its open position, a float connected with said stem for raising the valve onto the valve seat and said casing having an outlet in its upper end in communication with the interior of the bushing.



1,279,580. 1,279,468. 1,279,735. 1,279,572.

1,279,572. Roof Flashing and Jacket for Vent Pipes. Francis J. Moore, Minneapolis, Minn. An inclined flashing formed from a single sheet of metal having an upwardly pressed central portion with a flatter pitch than said flashing, a vent pipe jacket secured to said portion of the flashing, the vertical corners of said central portion of the flashing adapted to be folded to change the inclination of the central portion of the flashing.

Convention Dates

November 13 and 14, 1918.—The annual convention of the National Founders' Association, in New York City, with headquarters at the Hotel Astor.

November 25, 26 and 27, 1918.—The annual convention of the National Housing Association, at Boston, Mass.

December 11 and 12, 1918.—The regular quarterly meeting of the National Association of Brass Manufacturers, in New York City.

January 14, 15 and 16, 1919.—The annual convention of Iowa Master Plumbers' Association, at Cedar Rapids, Iowa.

Walnut Creek, Cal.—W. E. Mauzey has purchased his partner's interest in the plumbing firm of Mauzey & Carpenter.

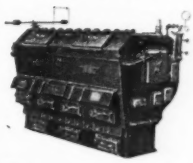
Blackfoot, Idaho.—E. L. Nugent has admitted Mr. Kreft into partnership in his plumbing business, and the firm name will be Nugent & Kreft.

Albany, Ala.—H. Mullen, of this city, has secured the contract for the installation of a steam heating system in the Y. M. C. A. building at Sheffield.

Economical Heating—A sufficient reason why you should install

PIERCE DOWN DRAFT HEATING BOILERS

For Steam, Water, Vapor, Vacuum, Heating



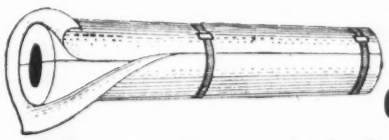
There are other reasons, too:

1. Magazine Feed.
2. Down Draft.
3. Smoke Consuming.
4. 25% Fuel Expense Saved.
5. 50% Less Attention.
6. All Cast Iron.

Manufactured only by

PIERCE, BUTLER & PIERCE MANUFACTURING CORP.

Brooklyn NEW YORK Philadelphia
Boston Worcester Syracuse Baltimore Washington



Pipe Coverings

Magnesia and Asbestos

All Kinds

Our free art sign will help your sales. Write today for it, prices and samples.

Acme Asbestos Covering & Supply Co.
407 N. Ada Street, Chicago

The Milwaukee Mixer

Anti-Scalding Leak-Proof

Accessible Durable

No Cams

Made to suit all conditions

No Springs

Order from your jobber

Fig. C-15

The Milwaukee Flush Valve Co.
MILWAUKEE, WISCONSIN
Specialists in the Manufacture of Valves

FOR lasting quality and true capacity use "KOVEN" Pure Iron, Double Row Riveted, Galvanized Range Boilers, or NACO Galvanized Range Boilers made of open hearth steel. These boilers may be bought of jobbers everywhere.

L. O. KOVEN & BRO.
50 CLIFF STREET NEW YORK

Classified Advertisements

The charge for advertisements under this heading is $1.00 for 25 words or less, including heading and address; 4 cents each for additional words. To insure insertion, copy and remittance should reach us by Wednesday morning.

Situations Open

WANTED—CAPABLE MANAGER FOR plumbing, heating and mill supply house located in South. Good opportunity and good pay. Situation now open. Address 2560, care Domestic Engineering, 407 S. Dearborn St., Chicago. 10-12; 11-30

WANTED—CAPABLE SALESMAN FOR a large plumbing and heating supply house, located in Chicago. Good opportunity and good pay for a live wire. State age, experience and territory in which you are acquainted with trade. Address 2566, care "Domestic Engineering", 407 S. Dearborn St., Chicago. 11-2;9

WANTED—AN ALL-ROUND PLUMBER and Fitter. Married man preferred. Steady work the year round. Good wages and low rent. Also a business chance for the right party. Location, a thriving central Ohio city of 9,000 people. Address 2562, care "Domestic Engineering", 407 S. Dearborn Street, Chicago. 10-26/11-2

WANTED—COMPETENT BILL CLERK for a large Plumbing, Heating and Mill Supply jobbing house, located in Chicago. Good opportunity and good pay for experienced man. Situation now open. Address 2564, care "Domestic Engineering", 407 S. Dearborn Street, Chicago. 11-2;9

WANTED—HEATING AND VENTILATING engineer. One with experience. State age, salary desired, whether married and where last employed. Haynes Selling Co., 1711 Sansom Street, Philadelphia, Pa. 9-14 tf

PLUMBERS WANTED—FIRST CLASS men, $8.00 for eight hours. Steady employment. Ideal climate. No labor troubles. Must affiliate with the unions. Address A. M. Goddard, Tacoma, Wash. 10-5-6

Situations Wanted.

POSITION WANTED — WHAT HAVE you for a licensed plumber? Can figure and lay out work—heating especially. Have been selling in Central Illinois and Eastern Iowa territories. Can give references. Apply to 2567, care "Domestic Engineering", Chicago. 11-2/30

For Sale.

FOR SALE—1000 SQ. FT. 38 IN. 3 COL. plain water radiation good as new. Progress steam boiler No. 940 also good as new. Cheap if taken at once. For further particulars write C. J. Ohlmacher & Co., Sycamore, Ill. 11-2

FOR SALE CHEAP—50 WOLFF'S Vienna Lavatories, H 3509, size 18x20, complete with Gielow self-closing cocks. Supplies and traps to all. Apply at once to 2561, care "Domestic Engineering," 407 S. Dearborn St., Chicago. 10-19-26/11-2

FOR SALE—3000 N. P. "P" TRAPS AT $1.40 each. 1¼" N. P. American No. 1407 "P" Traps with plug and rubber stopper. 1½"x1¼" N. P. American No. 8341 "P" Traps less plug and rubber stopper. 1½" N. P. American & Elgin "P" Traps less plug and rubber stopper. Freight allowed up to 60 cents per hundred pounds. All orders subject to stock on hand. H. R. Stoll & Co., Station & Durango Sts., El Paso, Texas. 11-2

Miscellaneous.

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